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Dissertation Advisor: Professor Eve Blau Anna Darice Miller

The Army Post as Design Laboratory:
Experiments in Urban Planning and Architecture,
1917-1948

Abstract

This dissertation examines the engagement of civilian designers in United States Army post architecture and planning between 1917 and 1948. During those years, the built environment of the Army was fundamentally transformed, as troops relocated from frontier posts and coastal fortifications to large permanent military bases. First conceived of as "soldier cities," by the end of World War II these posts had come to resemble garden suburbs. At the same time, the architecture and planning of civilian communities also changed. Turn-of-the-century affection for the industrial city had, by 1920, given way to a preference for suburban living among the upper classes. After World War II, suburbia would become ubiquitous, as federally-supported tract-house developments sprung up around the nation.

These changes in civilian and military architecture and planning were, I argue, tightly connected, in part through the movement of civilian designers back and forth between civilian and military commissions. For architects and planners, the Army post was a kind of laboratory in which to experiment with design concepts outside the constraints of the real estate market. For Army officials, meanwhile, the involvement of outside experts in post design helped to convince potential recruits and the public alike that military life was not so different from civilian life. As the built environments of military and civilian America mutually influenced one another, the distinction between the two narrowed, and the Army effectively hid itself in plain sight.

I track the exchange between civilian and military design ideals in five chronological chapters, each highlighting a particular episode in Army post design, and each connecting to broader themes in American urban and suburban history. The first two chapters take place during World War I and look at the planning of the Army's training camps, and the architecture of the YMCA and YWCA buildings therein. The third chapter focuses on the permanent post-building program of the 1920s and 1930s. The fourth chapter recounts the Army's pre-World War II experiments in prefabrication, and the final chapter examines the re-planning of the atomic town of Oak Ridge, Tennessee, in 1948.

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For my parents,
Andrea and Gregory Bergren,

and for Sean

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Introduction

Between the end of the nineteenth century and the close of World War II, the built environment of the United States Army changed radically. During the 1880s and 1890s, soldiers lived in squalor on isolated frontier posts and obsolete coastal fortifications. The training camps of World War I, in contrast, were conceived of as small cities, and were constructed according to the latest urban planning and sanitation principles. The permanent Army bases of the 1930s and the temporary atomic towns of the 1940s, in turn, were modeled on recent developments in suburban residential design.

During the same period, America's civilian communities were likewise transformed. The landscape of the early-twentieth-century United States could still be clearly partitioned into "urban" and "rural" spaces. As of the 1910 census, nearly half of the country's population lived in cities,[1] close to centers of industry and commerce as well as to the profound poverty decried by Jacob Riis and other contemporary observers. One decade later, the suburban exodus that had begun years earlier reached a tipping point, with the new neither-urban-nor-rural areas growing faster than the urban core for the first time.[2] If the iconic architectural image of America in 1900 was the skyscraper, in 1950 it was the single-family suburban tract home.

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[1] U.S. Census Bureau, Geography Division, "United States: 1790 to 1990," *Urban and Rural Classification*, http://www.census.gov/geo/www/ua/urbanruralclass.html (accessed November 24, 2012).

[2] Gwendolyn Wright, *Building the Dream: A Social History of Housing in America*, paperback edition (Cambridge: MIT Press, 1983), 195; Robert Fishman, *Bourgeois Utopias: The Rise and Fall of Suburbia* (New York: Basic

The evolutions of the United States's military and civilian built environments during the first half of the twentieth century were not unrelated. To the contrary, developments in military and civilian architecture and planning were closely tied, in large part due to the movement of individual designers between private practice and work for the federal government. Far from operating within a military vacuum, the men and women who built America's modern Army facilities brought their experience working within civilian communities to bear on almost every aspect of military post design.

Nor was the exchange between civilian and military architectural and planning ideals unidirectional. Architects and city planners working for the Army did not just translate existing civilian design principles into military terms; they also took advantage of their military commissions to realize ideas that might have remained theoretical in a civilian context. The Army, after all, was in many ways a unique client. It had the legal power to assemble large, continuous tracts of land without restrictions on use. It operated as the sole owner or lessee of these reservations, simplifying coordination across all aspects of the built environment, from roads and utilities to land-use planning and architecture. And it made decisions about building projects based on a combination of military strategy and Congressional budgetary constraints, not the ups and downs of the real estate market.

In the following chapters, I will explore a series of episodes between World Wars I and II during which Army officials tapped civilian design experts to re-imagine America's military posts. For the designers themselves—who ranged from well-known city planners and architects to the men who would become the Master Builders of the postwar suburban housing boom—I argue, Army work constituted a kind of laboratory within which they could articulate and

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Books, Inc., 1987), 16; Kenneth T. Jackson *Crabgrass Frontier: The Suburbanization of the United States* (New York: Oxford University Press, 1985), 175.

explore contemporary architecture and planning ideals. The men and women who designed America's twentieth-century Army posts did so not in the service of narrow military goals, but with an aim to advance community development more generally.

The exchange in design ideals between military and civilian spaces had implications beyond the individual projects discussed in this dissertation. As military officials increasingly relied on civilian experts to define the spatial character of the American military base, the distinction between the nation's "military" and "civilian" spaces became less and less clear. Thus even as the United States's military capabilities expanded beyond what the Founding Fathers could possibly have imagined, the material reminders of this expansion—the military posts at which soldiers train and live—became not more alien, but rather more familiar. Intentionally or not, the Army effected an architectural camouflage that, I suggest, aided its acceptance by a public historically predisposed against a standing military.

The United States's eighteenth- and early-nineteenth-century Army posts were of two types: the coastal fort and the frontier fort. Coastal forts, arrayed along the nation's Atlantic coast and designed to protect against sea attack, were built primarily of earth until after the War of 1812, when the so-called "Third System" of fortification design introduced all-masonry constructions. With the Army budget forever tight, soldiers were housed within the forts' damp, dark casemates, or gun portals.[3]

About as many soldiers as manned the eastern coastal fortifications lived on western frontier posts. These were temporary, often unfinished, posts, built of local materials by the

[3] R. Christopher Goodwin and Associates, Inc., *National Historic Context for Department of Defense Installations, 1790-1940* (Baltimore, MD: U.S. Army Corps of Engineers, 1995), 1:11-12, http://aec.army.mil/usaec/cultural/docs.html (accessed November 24, 2012).

soldiers themselves.[4] The earliest western forts were defensive structures, complete with blockhouses and palisades, but after 1812, as protection against attack proved less important than providing a staging ground for offensive action and other, non-military, activities including farming, only those posts near plentiful lumber supplies were built with a surrounding wall.[5]

During the pre-Civil War period, the Army issued no official instructions for the laying-out of western posts, so most were designed by the local commanding officer.[6] As Alison K. Hoagland points out in an article on fort design, in most cases the post's top officer replicated on the western prairies a New England village, complete with a village green (the fort's parade ground) surrounding by houses (quarters). Architectural cues including picket fences and front porches reinforced the identity of the western post as a civilized, even a civilianized, space.[7]

Throughout this period and during the first couple of decades following the Civil War, Army-post construction remained decentralized and thus resistant to standardization. In a different article, Hoagland explains that the obstacles to standardization of Army architecture and planning included not just variations in climate and the expense of transporting building materials long distances, but also the obstinacy of line officers (i.e. those working in the field),

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[4] Charles Morse Stotz, "The Reconstruction of Fort Ligonier: The Anatomy of a Frontier Fort," *Bulletin of the Association for Preservation Technology* 6, no. 4 (1974): 6, 18.

[5] R. Christopher Goodwin and Associates, Inc., *National Historic Context*, 1:6-7; Alison K. Hoagland, "Village Constructions: U.S. Army Forts on the Plains, 1848-1890," *Winterthur Portfolio* 34, no. 4 (Winter 1999): 218-9.

[6] Paul Chattey and others, *Context Study of the United States Quartermaster General Standardized Plans* (*Quartermaster General Standardized Plans*)*, 1866-1942* (Aberdeen Proving Ground, MD: U.S. Army Environmental Center, Environmental Compliance Division, 1997), 28, http://aec.army.mil/usaec/cultural/docs.html (accessed November 24, 2012).

[7] Hoagland, "Village Constructions," 223, 7.

who remained unconvinced that staff officers in Washington knew better when it came to designing frontier forts.[8]

Nonetheless, the Quartermaster Corps did issue two sets of design regulations prior to 1880. The first, put out in 1860 or 1861, seem merely to have recorded existing practices, and did not represent an attempt to radically change post-building methods.[9] In 1872 Quartermaster General Montgomery C. Meigs issued a second set of plans, which he called "model" plans and which were accompanied by relatively little explanatory text. Meigs's plans were used widely in the field, though selectively and with much local variation.[10]

Two developments during the 1870s and 1880s contributed to an eventual shift in the attitude toward design standardization. First, the American Indians became less of a threat to European-American settlers as they were contained within reservations.[11] Second, observers became increasingly vocal about the poor living conditions at both coastal and western forts. In 1875 the Surgeon General issued a report blaming bad construction and the lack of decent water supplies for diseases on Army posts.[12] The Inspector General surveyed housing conditions at military posts at about the same time. He wrote of an earlier visit to Ft. Randall in the Dakota Territory:

> None of the quarters, either for officers or men, are inhabitable; they are filled with bed-bugs, fleas, rats, mice, &c. The lower logs of the quarters are rotten, and many of the buildings are falling. During the warmer months the officers move out of the quarters

[8] Alison K. Hoagland, "'The Invariable Model': Standardization and Military Architecture in Wyoming, 1860-1900," *Journal of the Society of Architectural Historians* 57, no. 3 (September 1998): 299-300.

[9] Chattey, *Quartermaster General Standardized Plans*, 38; R. Christopher Goodwin and Associates, Inc., *National Historic Context*, 1:154.

[10] Hoagland, "'The Invariable Model,'" 304-7.

[11] R. Christopher Goodwin and Associates, Inc., *National Historic Context*, 1:23-24.

[12] Ibid., 25.

> and live in tents, and the men sleep on the parade to avoid being devoured alive by vermin. While sitting in the commanding officer's quarters two bugs dropped from the ceiling upon me.[13]

It took some time, but Congress and the Army finally responded to the desperate need for better military housing. In the 1880s the Quartermaster Corps began constructing permanent facilities with water and other utilities; in 1882 General Sherman proposed consolidating those troops scattered among hundreds of no-longer-needed western posts.[14] By this time, moreover, a couple of the obstacles to standardization cited by Hoagland had disappeared: railroad shipment of building materials was now an affordable option; and post quartermasters realized that they did not have the expertise necessary to design structures with internal plumbing, or to comply with the Army's new bidding system.[15]

During the years between 1890 and 1917, the Office of the Quartermaster General issued hundreds of standardized building plans, many of which Bethanie Grashof catalogued in a six-volume report for the Army.[16] This explosion of design activity included many different plans for each building type: Grashof counted 82 distinct designs for family housing, for example, with between one and fifteen variations each.[17] The designs also varied stylistically, with Quartermaster Corps staff applying a number of popular architectural styles to their buildings, including—according to an Army study—Victorian, Colonial Revival, Spanish Revival,

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[13] Inspector General quoted in Ibid., 25.

[14] Chattey, *Quartermaster General Standardized Plans*, 6.

[15] Hoagland, "'The Invariable Model,'" 310-12.

[16] Bethanie C. Grashof, *A Study of United States Army Family Housing Standardized Plans* (*Army Family Housing*), 6 vols. (Atlanta Georgia: Georgia Institute of Technology, 1986), http://www.dtic.mil/dtic/ (accessed November 24, 2102).

[17] Grashof, *Army Family Housing*, 1:1.

Neoclassical, Romanesque, Queen Anne, Georgian Revival, and Italianate.[18] In general, however, the buildings' exteriors were simpler than their civilian counterparts, to save money.[19]

Army-post planning remained relatively undefined up until the start of World War I; the Army Regulations of 1904 specified only that posts should look nice.[20] Most post planners relied on a grid layout, to monotonous effect.[21] The post parade ground remained its central element, with barracks and officers' quarters arrayed to either side of it.[22] This would change only after World War I, with the inauguration of the War Department Housing Program (see chapter 3).[23]

The Army's reliance on civilian designers accelerated during the final years of the nineteenth century. According to an Army study of Quartermaster Corps standardized plans, civilian architects received contract commissions for urban posts during the mid-nineteenth century. The military's adoption of popular civilian architectural styles was, this same study argues, at least in part based on the involvement of these architects in Army work.[24] During the 1880s and 1890s even more civilian designers accepted work with the Army. These included: William Goding (Ft. Riley); Gustav Freibus (Ft. McPherson); Holabird and Roche (Ft. Sheridan); E. T. Carr (Fort Leavenworth); F. J. Grodavent (Ft. Logan); and Alfred Giles (Ft. Sam

[18] Chattey, *Quartermaster General Standardized Plans*, 31.

[19] Ibid..

[20] R. Christopher Goodwin and Associates, Inc., *National Historic Context*, 1:181.

[21] Chattey, *Quartermaster General Standardized Plans*, 54.

[22] Ibid., 293.

[23] Ibid., 56-7.

[24] Ibid., 33, 39.

Houston).[25] At least three of these architects' plans were later reinvented as standard Quartermaster Corps designs.[26]

In the late 1890s and early 1900s, the Office of the Quartermaster General moved away from signing contracts with civilian architects in order to lower costs, and instead issued standard plans from its Washington office.[27] To support its new centralized building program, the Quartermaster Corps hired a number of professional architects for permanent work in the office, the first of whom was Francis B. Wheaton, a former employee of McKim, Mead & White.[28] Wheaton and other Quartermaster Corps staff would remain in charge of most stateside design work until World War I, when the Army again hired outside designers to assist in laying out its training camps (see chapter 1).

Army officials repeatedly turned to civilian architects and city planners in part to mitigate the apparent conflict between a standing army and a decentralized democracy. Because Congress controls the military's building budget, the Army's built environment has historically been the stake as well as the site of the broader contest to define the role of the military in American society. On Congress's side, ambivalence toward a standing Army manifests itself in meager appropriations for Army construction. On the side of the Army, a preference for architecture and planning that mimicked—rather than distinguished itself from—civilian design

[25] R. Christopher Goodwin and Associates, Inc., *National Historic Context*, 1:175-6.

[26] Grashof, *Army Family Housing*, 1:34-6.

[27] Grashof, *Army Family Housing*, 1:30.

[28] Hoagland, "'The Invariable Model,'" 313.

can be understood as an attempt to naturalize the military, reassuring Americans who come in contact with it that life in the Army is not so different from civilian life, after all.

In more practical terms, the fact that in peacetime the United States Army is an all-volunteer force means that military recruiters must compete with private-sector employers for personnel, especially officers. Thus the quality of life on military installations must be perceived as equivalent to that in civilian communities. The built environment, and particularly housing, is a big part of the quality-of-life equation; Army officials work to create a favorable architectural impression on soldiers and their families.

Underlying much of the discussion, historic and contemporary, of Army base design is an unnamed referent: the European standing army. Relatively little has been published in English on twentieth-century European military space, with Jean-Louis Cohen's recent work on the architecture of World War II being an important exception.[29] What has been written tends to focus on defensive structures including the Atlantic wall, for example Paul Virilio's *Bunker Archeology* and Keith Mallory and Arvid Ottar's 1973 *Architecture of Aggression: A History of Military Architecture in North West Europe, 1900-1945*.[30] But the historian's understanding of European military-base design may be of little importance in this case, as the architects of America's mid-twentieth-century Army posts seem to have themselves not known very much about what their counterparts across the Atlantic were doing. Rather, the focus, as we shall see, was largely internal, on creating an *American* Army architecture that *Americans* would

[29] Jean-Louis Cohen, *Architecture in Uniform: Designing and Building for the Second World War* (New Haven, CT: Yale University Press; Canadian Centre for Architecture, 2012).

[30] Paul Virilio, *Bunker Archeology*, trans. George Collins (New York: Princeton Architectural Press, 2008); Keith Mallory and Arvid Ottar, *Architecture of Aggression: A History of Military Architecture in North West Europe, 1900-1945* (n.p.: Architectural Press, 1973).

understand as something that they had themselves created, and not as a European import that fitted poorly into the local context.

An interdisciplinary work at the intersection of architectural history and military history, this dissertation engages several sets of literature. First, it challenges our understanding of the impact on American civilian culture of the spaces of war. Much of the existing literature on twentieth-century American military installations is focused on the United States's bases overseas. These works tend to frame the conflicts taking place in and around military posts in terms of American versus indigenous, rather than military versus civilian, cultures. In *America Town: Building the Outposts of Empire* (2007), for instance, Mark Gillem decries the export of sprawling automobile suburbs to countries with a different planning tradition, notably Japan, without examining how America's military bases came to take the shape they did in the first place.[31] Katherine T. McCaffrey's study of the United States Navy in Vieques, Puerto Rico, *Military Power and Popular Protest* (2002), is much more nuanced, but likewise focuses on the military's projection of power, via its bases, outside rather than inside the United States.[32]

Catherine Lutz's research on Fort Bragg (2001) is an exception to this concentration on external rather than internal imperialism.[33] Lutz introduces a concept she calls "civilian camouflage," by which she means that the apparently straightforward distinction between "civilian" and "military" conceals the profound economic and social impact military installations

[31] Mark Gillem, *America Town: Building the Outposts of Empire* (Minneapolis: University of Minnesota Press, 2007).

[32] Katherine T. McCaffrey, *Military Power and Popular Protest: The U.S. Navy in Vieques, Puerto Rico* (New Brunswick, N.J.: Rutgers University Press, 2002).

[33] Catherine Lutz, *Homefront: A Military City and the American Twentieth Century* (Boston: Beacon Press, 2001).

make on their surrounding communities. I extend the kinds of questions Lutz asks about Fort Bragg to a national level, illuminating the relationship between the mid-twentieth-century expansion of the Army and the shaping of America's cities and suburbs.

Other studies of military space have had a more explicit architecture or planning focus. The 1995 collection of essays *World War II and the American Dream,* for instance, includes essays on how wartime commissions, materials restrictions, and demographic shifts affected individual designers as well as architectural and planning practices.[34] Jean-Louis Cohen's abovementioned *Architecture in Uniform: Designing and Building for the Second World War* (2011) is a remarkable study of the various activities engaged in by architects worldwide between 1941 and 1945. Cohen reminds us that professional designers' work for the warring governments included not just fortifications and military camps, but also war housing communities, camouflage, and the development of new materials and building methods. My dissertation extends these analyses in two important ways. First, I study the peacetime building projects of the 1920s and 1930s as well as the extraordinary circumstances of wartime construction. In addition, I understand the relationship between military programs and civilian design practices as one of *mutual* influence, in which Army spaces simultaneously created and were created by ideas about the modern American city and suburb.

In addition to the literature on architecture and war, this dissertation also draws on histories of the American state. Here two themes are particularly relevant. The first is the question of American exceptionalism. Like political scientist Stephen Skowronek (*Building a New American State*, 1995), I understand the American state to differ from its European

[34] Donald Albrecht, ed., *World War II and the American Dream: How Wartime Building Changed a Nation* (Cambridge, MA: MIT Press, 1995); Similar themes are addressed in the slender *1945: Creativity in Crisis, Chicago Architecture and Design*, the publication for a 2005 Art Institute of Chicago exhibition. [John Zukowsky and Others (Chicago: The Art Institute of Chicago, 2005).]

counterparts most noticeably in its separation of power and distribution of functions.[35] But I disagree with Skowronek and other historians of early-twentieth-century Army reform with respect to the relationship between this unique state structure and the development of the Regular Army. Skowronek et al. have emphasized the extent to which the division of power between Congress and the Executive Branch has limited the expansion of an American standing army. My dissertation, in contrast, shows how the tension between America's decentralized, democratic polity, and the centralized state apparatuses championed by progressive reformers, resulted in a drawing-together of the nation's civilian and military cultures—rather than a wholesale rejection of the latter by the former.

In its focus on the extent to which the Regular Army was integrated into, rather than rejected by, civil society, this project most closely follows John Whiteclay Chambers, II's history of the draft in America (1987).[36] In Chambers's story, proponents of the draft carried the day only after they successfully redefined the Selective Service Act as inherently democratic. In this dissertation, the forces at work shaping military bases and civilian communities into simulacra of one another were far less direct. Nevertheless, its conclusion—that by their constant reference to civilian spatial ideals, Army post architects and planners helped to ease Americans' discomfort with the standing army in their midst—echoes Chambers's conviction that the question is not

[35] Stephen Skowronek, *Building a New American State* (Cambridge: Cambridge University Press, 1995); Skowronek's predecessor, Samuel Huntington, located the origins of the Constitution's emphasis on liberty over order in the circumstances of its creation. Because its framers were tasked with protecting Americans from the perceived monarchical tendency towards tyranny, rather than with creating political order where there had been none before, they concentrated on the limitation of authority and division of power, rather than on the creation of authority and accumulation of power. [Samuel P. Huntington, *Political Order in Changing Societies* (New Haven: Yale University Press, 1968).]

[36] John Whiteclay Chambers, II, *To Raise an Army: The Draft Comes to Modern America* (New York: Free Press, 1987).

why the draft has not been employed more often in American history, but how it conquered public resistance the few times it was.

Second to the theme of American exceptionalism is the relationship of the military to American society more generally. Charles Maier (*Among Empires*, 2006) argues against a characterization of American empire (or hegemony) as based exclusively on "soft" (economic) power.[37] Instead, he insists that concerns over physical territory are irreducible in any scenario of dominance, and that soft power cannot function without the backing of hard (military) power. In the American case, the nuclear bomb and Fordist production techniques were equally important to the United States's post-World War II imperial agenda. And just as the United States depends on its military supremacy to extend its social and economic influence, Maier argues, so was America's own politico-economic development dependent on its quest for military might.[38] This dissertation constitutes a prologue to the story Maier tells. It shows how even before the development of its nuclear arsenal, the growth of the United States military played a crucial role in configuring the spatial, as well as the social and economic, structures so important to the nation's postwar identity.

One of the broadest claims this dissertation makes is that space matters. Architecture and planning do not merely fulfill functional requirements. Rather, both builders and users tend to endow spaces with meaning. In the context of Army posts, I argue, military officials hired experts in civilian community design in part to normalize the Army, to neutralize its perceived

[37] Charles Maier, *Among Empires: American Ascendancy and its Predecessors* (Cambridge, MA: Harvard University Press, 2006).

[38] Here Maier's argument is reminiscent of Charles Tilly's. In *Coercion, Capital, and European States, AD 990-1992*, Tilly situates the quest for military supremacy at the very center of the state-building process, explaining the development of the nation-state in terms of the mechanics of building and maintaining a standing army. [Cambridge, MA: Blackwell, 1992.]

threat to democracy and individualism. But while I suggest that the planning and architecture of American Army posts does reflect certain ideas about how the military should function in society, this is not to say that these ideas automatically imply specific forms. Instead, the architects and planners working for the military created new forms based not just on instructions from Army officials, but also on a variety of precedents (both military and civilian), practical concerns (such as material and labor shortages), and social theory. The built environment of the Army base, therefore, has the capacity to create new ideas about the American military, even as it substantiates existing ones.

In *The Production of Space* (1974) sociologist Henri Lefebvre developed a theory of "social space," which may be understood as an extension of Marx's theory of the fetishism of commodities.[39] That is, just as Marx showed the commodity (the principal output of the capitalist system of production) to be tied to (social) labor relations, so Lefebvre demonstrated that physical space (the principal output of the post-industrial system of production) has embedded within it the social dynamics responsible for its emergence. Thus space is neither preexisting nor absolute, but produced over time and relative.

Lefebvre explained the production of space as a dialectical relationship among the members of the following conceptual triad: *spatial practice; representations of space;* and *representational space.* The first concept, *spatial practice,* refers to the ways by which a society both produces physical space, and engages with already-produced physical space. *Representations of space* and *representational space* have to do with how social relationships are contested in, and in relationship to, social space. *Representations of space* are conceptualizations of space propagated from the top down by the society's technocrats. *Representational space* is

[39] Henri Lefebvre, *The Production of Space*, trans. Donald Nicholson-Smith (Oxford: Blackwell Publishing, 1991); Karl Marx, "The Commodity," chap. 1 in *Capital,* vol. 1 (1867; repr. New York: Penguin Classics, 1990), 125-177.

the space within which *representations of space* are passively received, but also might be appropriated or reconfigured through symbolic manipulation.

In Lefebvrian terms, this project will illuminate both the *spatial practice* responsible for the production of Army space, and the *representations of space* employed, whether intentionally or not, to hide it in plain sight. The story of the built environment of the United States Army is, on one level—the level of *spatial practice*—the story of the military posts themselves, of why and how they were built. On another level—that of *representations of space*—the same story shows how the designers involved used the Army post as a laboratory, a space in which to refine or transform ideas about community before reintroducing them to civilian architecture and planning.

In addition to Lefebvre, this dissertation was informed by the work of Michel Foucault, and in particular his concept of "heterotopia."[40] A heterotopia is a real-life utopia, a space that represents either the perfection or inversion of all other, non-heterotopic, spaces. In his lecture on the topic (1967; published in English in 1986), Foucault suggested that heterotopias could be divided into two categories: heterotopias of crises, that is, sacred spaces in which people in crisis are segregated from the rest of the society; and heterotopias of deviation, or spaces within which people who challenge cultural norms are similarly isolated. Whether of crisis or of deviation, Foucault argued, all heterotopias share certain characteristics. Among these are the heterotopia's ability to combine in one place otherwise incompatible spaces; the association of heterotopias with chronological breaks; the fact that heterotopias are always in some ways gated and thus exclusive; and the way in which heterotopias relate to other spaces, either by revealing the

[40] Foucault, "Of Other Spaces," trans. Jay Miskowiec, *Diacritics* 16, no. 1 (Spring 1986): 22-27.

constructed nature of those sites, or by compensating for what these other places are understood to lack.

The American Army base corresponds to a Foucauldian heterotopia as I understand it. While Foucault pointed to compulsory military service as a heterotopia of crisis, the American military post, I suggest, can best be understood as a heterotopia of deviation, in that it cordons off and conceals the machinery of war during times of peace. As for the qualities of heterotopia named above, the Army post has all of these. The military base combines both destructive and constructive spaces, both armories and children's classrooms, firing ranges and officers' clubs. Army bases, moreover, are associated with a particular temporal rupture—what we call "wartime." Third, the military post is literally fenced in, with armed sentries directing entrance and egress.

The final aspect of Foucault's heterotopias forms the crux of the argument I make below. That is: the military post is intimately related to other spaces, namely civilian cities and suburbs. America's Army bases were consciously constructed as ideal communities, according not to military strategy but to architectural and city planning principles whose basis lay in civilian settlements. Because the men and women who designed these spaces regularly translated their lessons back to non-military America, the military base is a model community in both senses of the term: in that it represents an unattainable ideal; and in that it served as the prototype for later, civilian, cities and suburbs.

The first two chapters of this dissertation look at Army architecture and planning during World War I. Chapter 1, "The Army Post as Model City," focuses on the group of architects and landscape architects who laid out sixteen National Army Camps during 1917. These men, all of

whom were leaders in America's nascent city planning movement, used their experience planning the training camps to work out certain questions that were central to their discipline. First, they affirmed in their Army work the definition of planning as the preparation of a flexible program to guide future growth. Second, they looked at the relationship between aesthetics and function in city planning, their different conclusions foreshadowing a split between adherents of the City Beautiful and City Practical modes of community design. Finally, the cantonment planners re-imagined their work as a cooperative enterprise, rather than as a solitary art. Despite the fact that their creativity was constrained by Army regulations as well as a short timeline, the men who laid out the training camps used the experience to argue in favor of the professionalization of city planning after the war.

In the second chapter, "Building a Moral Army," I examine the in-camp building programs of both the Young Men's Christian Association (YMCA) and the Young Women's Christian Association (YWCA) within the context of their prewar work with single men and women in industrial cities. Both organizations used architecture to identify their recreation centers as soldiers' homes away from home, as specifically domestic spaces opposed to the surrounding Army environment. Both the YMCA's and the YWCA's wartime programs, in addition, influenced their postwar building projects. The YMCA's World War I hut program led directly to its focus during the 1920s on smaller, more flexible community recreation centers. It may also have influenced the centralization of the YMCA's architectural program. The YWCA's hostess house program also impacted that organization's later building design, as these too morphed into multipurpose facilities and even stylistically reflected the wartime buildings.

Chapters 3 and 4 focus on the Army's building activities during the interwar years. In chapter 3, "Civilianizing Army Housing," I examine the War Department Housing Program, a

post renovation project begun in 1926. The Army hired a prominent city planner, George B. Ford, to alter the layout of many of its permanent bases. Ford advocated a different conception of the Army post as city, one in which the base's elite—its officers—were housed not at its center, but in peripheral residential enclaves. Ford's treatment of officers' housing, as exemplified in his plans for Governors Island and Fort Lewis, mirrored the contemporary popularity of the automobile suburb. The architectural side of the housing program, meanwhile, created a hierarchy of housing types, at the top of which sat the single-family home. In thus privileging the suburban single-family home, the Army's War Department Housing Program foreshadowed federal support for suburban homeownership during the New Deal and the late 1940s.

Chapter 4, "How Best to Build," considers *how* Army housing was built during the 1930s and 1940s. Over the years immediately preceding World War II, Army construction experts examined a number of prefabricated housing systems in order to determine their suitability for either permanent or temporary construction. They objected to all of the factory-fabricated products on several grounds, including their high cost and the fact that most required additional labor on-site. When it came time to build training camps for the Second World War, Army officials decided against prefabrication in favor of a time-tested alternative: wood construction using mass-production methods on site. The Army's disapproval of prefabricated housing, I suggest, helps explain private builders' rejection of the same. William Levitt and the other Merchant Builders of the postwar housing boom would make on-site mass-production famous, but its origins lay elsewhere.

In chapter 5, "The Atomic City is a Suburb," I look at the redesign of Oak Ridge, Tennessee, a Manhattan Project town, after World War II. In 1948, the Army asked Skidmore,

Owings & Merrill, whose earlier plan for the community had been rendered obsolete by a population boom, to revisit the site and consider its future as a self-governed town. SOM's Master Plan for Oak Ridge, I argue, epitomized contemporary anti-urban sentiment. For one thing, the Master Plan followed the Garden City model of urban planning, in which metropolitan regions are replaced by decentralized networks of low-density, size-limited communities. For another, SOM proposed protecting its plan through deed or lease restrictions, which were developed specifically within residential suburbs to counter the urban tendencies of densification and heterogeneity. I conclude by looking at the 1960s New Town of Columbia, Maryland as the logical successor to the Oak Ridge Master Plan.

Chapter 1: The Army Post as Model City: World War I Cantonments and Contemporary Town Planning

Introduction

"This is the biggest construction job New England has ever known," a newspaper reporter wrote during the July 1917 construction of Camp Devens, a National Army cantonment in Massachusetts. "The creation of a *magic city* by a force of civilians is one of the wonders of the world. When Chicago raised the great 'White City' on the shores of her lake the world wondered, but Chicago had years to accomplish the undertaking," he went on, referring to the architectural centerpiece of the 1893 World's Columbian Exposition. "[The Chicago fair's] buildings were only for temporary display. [Camp Devens] is being built for permanent habitation. It is doubtful if anywhere in the world was so great a work accomplished in so short a time."[41]

This newspaperman was just one of many contemporary observers to characterize the training camps of World War I as complete cities, magic or otherwise.[42] Among the most vocal proponents of the analogy were the civilian architects and landscape architects hired by the Army to lay out the cantonments during the first summer of America's involvement in the war. These

[41] "Building a City for 50,000 Almost 'Overnight,'" Boston Herald, July 29, 1917 (emphasis mine).

[42] Herbert J. Kellaway, "Camp Devens: The Cantonment at Ayer, Mass.," *Landscape Architecture* 8 (January 1918): 69, http://books.google.com/books?id=2vfmAAAAMAAJ (accessed September 9, 2012); Nelson Lloyd, "Our Soldier Towns," *Scribner's Magazine* 62 (September 1917): 332.

men, who together constituted the leadership of the nascent city planning movement in the United States, drew on earlier, primarily theoretical, research in community design to plan the Army camps. After the war they pointed to their Army work as evidence of the efficacy of comprehensive planning, in a bid to establish the legitimacy of city planning as a profession.

Three aspects of the civilian planners' work for the Army connect their wartime experience to the history of American city planning more generally. First, in attending to Army officials' concern for the expansibility of the training camps, the designers solidified their definition of planning as the preparation of a flexible program to guide a city's future physical development. These men looked to the City Beautiful plans of the recent past, including Daniel Burnham's and Edward Bennett's 1909 plan for Chicago, as models for the centralized, expandable cities they imagined the training camps to be.

Second, and quite apart from the Army program, the cantonment planners wrestled with the relationship of aesthetics to function in the city plan. Different designers arrived at different solutions to the problem: some, as befit their background as landscape architecture, relied on nature—in the form of existing trees and new plantings—to relieve the monotony of the training camps. Others, per the City Beautiful mandate, considered aesthetics and function simultaneously in making their plans. Still others, heralding the arrival of the City Practical movement, argued that beauty would necessarily follow from an efficient layout, and thus did not need to be consciously applied by the designer.

Finally, the city planners engaged in Army work began to reimagine their practice in terms of cooperation, rather than as a solo artistic endeavor. The men responsible for laying out the cantonments of World War I were never without the assistance of experts from other fields, be they sanitation engineers or Army men familiar with training requirements. The definition of

the city planner as coordinator would be the prevailing one after the war's end, another important departure from the City Beautiful model of urban design.

This chapter begins with a brief introduction to the World War I cantonment planners, with special attention to their professional affiliations and past planning experience. It then turns to the cantonment plans themselves, and looks at how the planners dealt with three particular problems: planning for future development; the aesthetics of the Army camp; and the role of the city planner vis a vis experts from other fields. Next it considers the revised set of typical cantonment plans prepared by the Quartermaster Corps in early 1918, which marked the transformation of the cantonments from temporary Army camps into centralized communities. The chapter concludes with an overview of how the cantonment planners' experience contributed to the professionalization of city planning, especially with respect to the founding of the first graduate program in the field in 1922.

The Cantonment Planners

The camp planning program was as much under civilian as under military direction. The official head of cantonment construction was Col. Isaac W. Littell, chief of the newly-formed Cantonment Division of the Army Quartermaster Corps.[43] But from the very beginning of his tenure, Littell worked closely with a number of prominent civilian designers. These included the members of the Council of National Defense's[44] Committee on Emergency Construction of

[43] Office of the Construction Division of the Army, *Report of the Chief of the Construction Division to the Secretary of War, 1919* (Washington, DC: Government Printing Office, 1920), 1. The Cantonment Division was created May 19, 1917. Littell was formerly head of the Construction & Repair Division of the Quartermaster Corps.

[44] Lloyd, "Our Soldier Towns," 331. Created by the Army Appropriation Act of August 19, 1916, the Council of National Defense consisted of the Secretaries of the Army, Navy, Interior, Agriculture, Commerce, and Labor, who were charged with the coordination of industries and resources for national security.

Buildings and Engineering Structures, and the architects and landscape architects recruited to help with field planning.

Two of the members of the Committee on Emergency Construction were leaders in the fields of construction and landscape architecture, respectively. William A. Starrett, the chair of the committee, went to school at the University of Michigan before joining the George A. Fuller Co., a major New York City contracting firm. He left the firm and, with his brother Theodore, founded a competing construction company, Thompson-Starrett. In 1913, the year Thompson-Starrett built the Woolworth Building,[45] Starrett left the business and joined the architectural firm of Starrett & van Vleck, which specialized in department-store design.[46]

The second member of the Committee on Emergency Construction, Frederick Law Olmsted, Jr.,[47] was past president of the American Society of Landscape Architects; past chair of the National Conference on City Planning; and, as of May 1917, the first president of the American City Planning Institute (later the American Institute of Planners). Olmsted's father, Frederick Law Olmsted, Sr., had played a pivotal role in the design and operation of the park systems of New York City, Boston, Rochester, and elsewhere. As an apprentice to Olmsted, Sr., Olmsted, Jr. worked on the Chicago World's Columbian Exposition (1893). Two years later, upon their father's retirement, Olmsted and his half brother John Charles Olmsted took over the

[45] Alan Michelson, "Thompson-Starrett Company, Building Contractors," *Pacific Coast Architecture Database,* https://digital.lib.washington.edu/architect/partners/3637/ (accessed September 8, 2012).

[46] George Martin, "Maj. Starrett Took Pains to Prevent Graft," *Taunton Gazette* (Taunton, MA), September 20, 1917. Goldwin Starrett was a partner in Starrett & van Vleck.;

[47] Olmsted first connected with Starrett as a member of a three-person commission sent to Washington, DC in May 1917 by the National Conference on City Planning. Olmsted, with architect George B. Ford and engineer E. P. Goodrich, delivered several NCCP resolutions first to the chairman of the General Munitions Board, then to the Committee on Emergency Construction. Olmsted was soon asked to join the latter subcommittee. In its resolutions, the NCCP urged the federal government to use city planning principles in building Army camps and workers' housing, and to seek advice on the same from its membership. Meeting minutes reproduced in Office of the Construction Division of the Army, *Report of the Chief of the Construction Division to the Secretary of War, 1918* (Washington, DC: Government Printing Office, 1919), 7-8.

practice, implementing comprehensive landscape plans for a number of university campuses, as well as private estates and public parks and park systems. Olmsted also mentored a number of American landscape architects and city planners, both at the family firm and as a professor at Harvard University (1900-1914), where he developed the first landscape architecture curriculum in the nation. At various times throughout his career he worked for the federal government, most significantly as a member of the 1901 Senate Park Commission tasked with preparing plans for the expansion of Washington, DC (the McMillan Plan), and in an advisory capacity as a member of the Commission of Fine Arts.[48]

The Committee on Emergency Construction sent a call to civilian engineers, architects, and landscape architects, asking them to consider consulting for the Cantonment Division.[49] Many of the men at the forefront of the city planning movement responded. Taken together, their experience in community planning illustrates the breadth of the profession in its earliest decades.

At least nineteen individuals were responsible for planning the sixteen cantonments, from preliminary inspections to the start of construction. (See table for a full list of the planners and their camp affiliations.) All but four had trained as landscape architects; Edward H. Bennett and Owen Brainard were architects, and L. V. Sheridan and E. N. Noyes were engineers. Of the fifteen landscape architects, only one, Harlan Kelsey, was not made a fellow of the American

[48] Rolf Diamant, "Frederick Law Olmsted, Jr., 1870-1957," *National Park Service Discover History Cultural Resources*, http://www.cr.nps.gov/history/online_books/sontag/olmsted.htm (accessed September 8, 2012); Jon A. Peterson, "The Birth of Organized City Planning in the United States, 1909-1910," *Journal of the American Planning Association* 75, no. 2 (Spring 2009): 129; "Frederick Law Olmsted Dies; Landscape Architect Was 87," *New York Times*, December 27, 1957.

[49] George Gibbs, Jr., "Exhibit 2-C Historical Statement Section of Advisory Engineer on Camp Planning, Engineering Division, Construction Division of the Army," 1, Frances Loeb Library, Harvard University; Warren H. Manning, "Planning the Cantonments: The Work of the American Society of Landscape Architects in Their Design," *American City* 18, no. 4 (April 1918): 331. Before leaving the NCCP for Washington, Olmsted, Goodrich, and Ford had sent telegrams containing a similar message to their professional contacts.

Society of Landscape Architects. Like Olmsted, most also held leadership roles in the ASLA at some point during their careers.[50] Many of the men, in addition, were affiliated with the National Conference on City Planning and/or the American City Planning Institute either before or after the war. For instance, Edward H. Bennett, Henry V. Hubbard, George Kessler, and James S. Pray, together with Olmsted, were all charter members of the American City Planning Institute.[51]

In addition, many of the cantonment planners had connections to Olmsted, the acknowledged father of American city planning. Warren H. Manning apprenticed with Olmsted, Sr., during which time he oversaw the final planting scheme for the 1893 World's Columbian Exposition.[52] J. S. Pray chaired the Department of Landscape Architecture at Harvard, which curriculum Olmsted, Jr. had helped develop.[53] S. Herbert Hare was a student of Olmsted's at the same university.[54] And Thomas W. Sears worked for the Olmsted Brothers firm for two years.[55]

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[50] American Society of Landscape Architects, "Leadership & Governance," http://www.asla.org/Leadershiphandbook.aspx?id=3754&ItemIdString=eeb11f839_34_110_3754 (accessed September 8, 2012).

[51] Mel Scott, *American City Planning since 1890* (Berkeley: University of California Press, 1971): 164.

[52] Robin Karson, "Warren H. Manning: Pragmatist in the Wild Garden," in *Nature and Ideology: Natural Garden Design in the Twentieth Century,* ed. Joachim Wolschke-Bulmahn, Dumbarton Oaks Colloquium on the History of Landscape Architecture (Washington, DC: Dumbarton Oaks Research Library and Collection, 1997), http://www.doaks.org/resources/publications/doaks-online-publications/garden-and-landscape-studies/nature/natur007.pdf (accessed September 8, 2012).

[53] J. S. Pray, "The Dept. of Landscape Architecture in Harvard University," *Landscape Architecture* 1, no. 2 (January 1911): 53-70.

[54] The Cultural Landscape Foundation, "S. Herbert Hare," http://tclf.org/content/s-herbert-hare (accessed September 8, 2012).

[55] Thomas Warren Sears Collection, "Biographical Note," *Smithsonian Gardens*, http://gardens.si.edu/collections-research/aag-sears-collection.html (accessed September 8, 2012).

Table of World War I Cantonment Planners[56]

Cantonment	Location	Preliminary Planner	Field Planner (if different)
Camp Custer	Battle Creek, Michigan	Thomas W. Sears	
Camp Devens	Ayer, Massachusetts	H. J. Kellaway	
Camp Dix	Wrightstown, New Jersey	Charles W. Leavitt, Jr.	
Camp Dodge	Des Moines, Iowa	Robert Wheelwright	
Camp Funston	Fort Riley, Kansas	J. S. Pray	J. S. Pray, S. Herbert Hare
Camp Gordon	Atlanta, Georgia	A. F. Brinkerhoff, C. N. Lowrie	Charles N. Lowrie
Camp Grant	Rockford, Illinois	Edward H. Bennett	
Camp Jackson	Columbia, South Carolina	Richard Schermerhorn, Jr.	
Camp Lee	Petersburg, Virginia	James L. Greenleaf	
Camp Lewis	American Lake, Washington	C. F. Pilat	
Camp Meade	Admiral, Maryland		Owen Brainard
Camp Pike	Little Rock, Arkansas	George E. Kessler, L. V. Sheridan	
Camp Sherman	Chillicothe, Ohio	Warren H. Manning	Warren H. Manning
Camp Taylor	Louisville, Kentucky	Harlan P. Kelsey	
Camp Travis	Fort Sam Houston, Texas	George E. Kessler, E. N. Noyes	
Camp Upton	Yaphank, Long Island, New York	Owen Brainard	F. Vitale

Finally, the men responsible for planning the World War I Army cantonments were engaged in the kinds of projects that constituted the lodestones of early-twentieth century American city planning. The German-born George Kessler was best known for his park and

[56] Sources: Gibbs, "Exhibit 2-C," 6; "War Records of Those Who Were Fellows and Members," in *Transactions of the American Society of Landscape Architects*, eds. Carl Rust Parker, Bremer W. Pond, and Theodora Kimball (Amsterdam, NY: The Recorder Press, 1922), 75-80 http://books.google.com/books?id=wKTNAAAAMAAJ (accessed September 8, 2012); *Report of the Chief of the Construction Division to the Secretary of War, 1918*.

parkway systems, including designs for Kansas City, Missouri; Dallas; Houston; St. Louis; Denver; Cincinnati; and Indianapolis.[57] Edward Bennett, who received a diploma in architecture from the École des Beaux-Arts in 1902, partnered with Daniel Burnham on the 1909 plan for Chicago, a major landmark in the history of American urbanism[58]. Warren H. Manning planned a number of company towns or workers' housing settlements, including for the Cleveland-Cliffs Iron Company in the Upper Peninsula of Michigan[59], the Arizona and Calument Mining Company in Arizona[60], and Goodyear Tire and Rubber in Ohio.[61] S. Herbert Hare would plan the new town of Longview, Washington shortly after the war.[62] And concurrently with their work for the Army, a number of the cantonment planners—including A. F. Brinkerhoff, James Greenleaf, H. J. Kellaway, George Kessler, Charles Lowrie, Warren Manning, E. N. Noyes, and J. S. Pray[63]—laid out housing developments for war workers for the United States Housing

[57] Jane Roy Brown, "Restoring Kessler's Legacy," *Landscape Architecture* 97, no. 9 (September 2007):70. During his four-decade career, Kessler also planned some 26 residential communities, 49 parks, and 26 school campuses..

[58] Francis S. Swales, "Master Draftsmen, XIV: Edward H. Bennett," *Pencil Points* 6, no. 3 (August 1925): 43, 49.

[59] Arnold R. Alanen and Lynn Bjorkman, "Plats, Parks, Playgrounds, and Plants: Warren H. Manning's Landscape Designs for the Mining Districts of Michigan's Upper Peninsula, 1899-1932," *Journal of the Society for Industrial Archeology* 24, no. 1 (1998): 42-46.

[60] Dixie Legler, "The Forgotten City Beautiful," *American Bungalow*, no. 40 (Winter 2003): 125-130.

[61] "Goodyear Heights, Akron, Ohio," *Architectural Forum* 28, no.4 (April 1918): 140-142. Warren H. Manning was the landscape designer for the project. George H. Schwan (or Schwann) was the architect.

[62] S. Herbert Hare, "The Planning of the Industrial City of Longview, Washington," *Transactions* (American Society of Civil Engineers), paper no. 1671, reprinted from *Transactions* 92 (1928), 756. Though the development of Longview was funded by the Long-Bell Lumber Company, its owners claimed not to be creating a company town, and instead opened the community to other industries.

[63] "War Records," in *Transactions of the American Society of Landscape Architects*, 75-80. Brinkerhoff was Town Planner for the USHC projects at Staten Island, NY and Elizabeth NJ. Greenleaf was Town Planner at Charleston, WV. Kellaway was Town Planner for Quincy, MA and Port Penn, PA. Kessler was the Project Town Planner for the USHC's midwestern projects. Lowrie was the Landscape Architect and Town Planner at New London, CT, Groton, CT, New Brunswick, CT, and Alton, IL. Manning was Landscape Architect and Town Planner at Lowell, MA. Noyes was Assistant Town Planner at Davenport, IA, Moline, IL, East Moline, IL, and Rock Island, IL. Pray was Landscape Architect and Town Planner at Seven Pines, VA and Ernston, NJ.

Corporation (USHC).[64] In addition, H. V. Hubbard was assistant manager to the Town Planning Division of the USHC, and S. Herbert Hare worked as a district planner for the agency.[65]

Planning the Training Camps

The cantonment planners' primary responsibility was to translate the typical training-camp plan prepared by the Quartermaster Corps into a particular plan for each site. The Quartermaster Corps had first mapped out an ideal cantonment in April 1917. In this plan (see figure 1.1), based on recent experience on the Mexican Border and at active Army posts,[66] the personnel comprising a single infantry division of about 26,000 troops are arrayed by unit in a U around a central parade ground. A main road and railroad running in parallel describe the U, and additional service roads run from the main road between columns of barracks, terminating in a circle facing the parade ground. Cutting across the mouth of the U is another road, at the center of which is the division headquarters.

[64] Scott, *American City Planning Since 1890*, 172. The USHC's initial program called for government-funded construction of 67 housing settlements in 47 cities. The armistice reduced the number of projects completed to 27, with a total of 6,000 housing units. None of the houses were occupied prior to the end of the war. The homes were sold to individual homeowners beginning in July 1919. The housing settlements, which after sales and salvage cost the government $25,000,000, were praised for the quality of their planning.

[65] United States Department of Labor, *Organization, Policies, Transactions*, vol. 1, *Report of the United States Housing Corporation* (Washington, DC: Government Printing Office, 1920), 64 http://books.google.com/books?id=4GwAAAAAYAAJ (accessed September 9, 2012). Olmsted was the first manager of the USHC's Town Planning Division.

[66] Office of the Construction Division of the Army, *Report of the Chief of the Construction Division to the Secretary of War, 1919.*

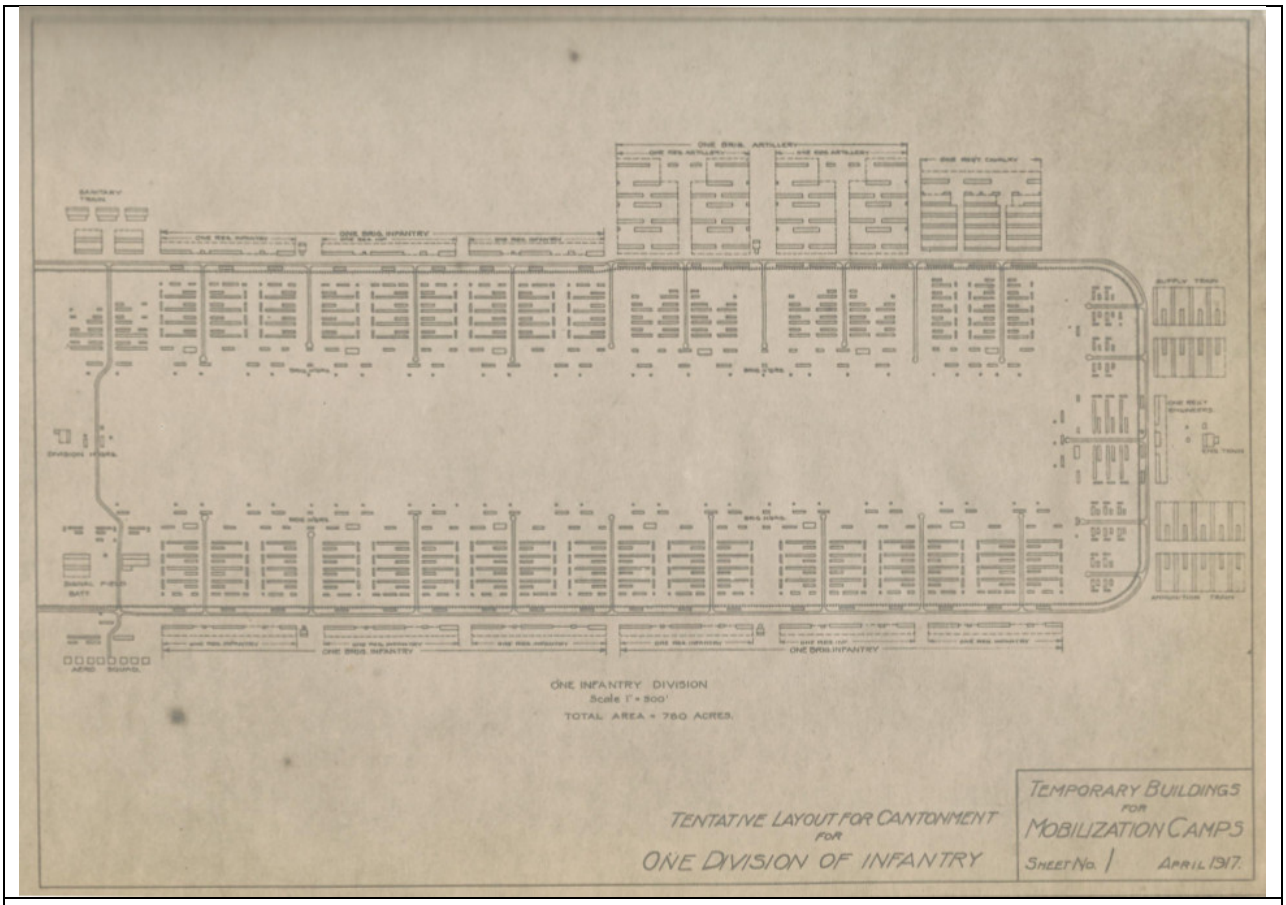

Figure 1.1: Typical Cantonment Scheme, April 1917. Published in George Gibbs, Jr., "Exhibit 2-C: Historical Statement, Section of Advisory Engineer on Camp Planning, Engineering Division, Construction Division of the Army," Frances Loeb Library, Harvard University.

In this scheme, the soldiers are housed in long one-story barracks arranged in columns parallel to the main road, each with a separate mess building between it and its nearest track-side neighbor. At one end of each barracks building is a separate lavatory building laid perpendicular to the barracks and kitchens. Specialty companies sleep and eat in shorter buildings between the other enlisted men and the railroad tracks. On the opposite side of the tracks are storehouses, also parallel to the road, and, beyond the road itself, rows of stables and shops. Non-infantry units have additional storage or shop facilities beyond these. The officers' buildings are arranged between the enlisted men's barracks and the parade ground, each with a separate, square lavatory

building. Between the officers' and enlisted men's housing for each unit are service buildings: a guard house; a medical building; a school or assembly hall; a post exchange; and, in the center, an administration building.

As pictured in the Quartermaster Corps's April 1917 drawings, each division comprises primarily infantry units (three brigades, or nine regiments), with in addition a single artillery brigade (two regiments), one regiment of cavalry, and, situated along the bottom of the U, a supply train, an engineer train, an ammunition train, and one regiment of engineers. To either side of the division headquarters are a sanitary train and a signal field battalion and aero squad.[67]

Though the drawings are marked as "suggestion only", with a note advising modification according to topographic conditions, they nonetheless make clear the relationship among units, as well as the relationship between officers and men, considered by the Construction and Repair division to be most productive to the task at hand—the conversion of hundreds of thousands of civilian men into soldiers. Besides the attention to sanitation evidenced by the separation of kitchens from sleeping quarters, sleeping quarters from lavatories, and animals from men, what is most remarkable about the April 1917 camp design is its combination of hierarchy and uniformity. While the officers and men are separated both spatially and in terms of their housing typology, the regularity of the camp as a whole affirms the Progressive vision of the standing army as a leveler of difference.

The Construction Division published a second set of typical cantonment plans in June 1917 (see figure 1.2), based on revisions made by Quartermaster Corps staff in collaboration with Starrett and Olmsted's Committee on Emergency Construction. The revised plans reflected the new, much higher, construction cost estimates released at the end of May. To keep expenses

[67] "Temporary Buildings for Mobilization Camps" sheets 1 and 2, dated April 1917. Published in Gibbs, "Exhibit 2-C," following page 2.

within the bounds of the pending $77 million Congressional appropriation, the Secretary of War had reduced the total number of wooden cantonments from 32 to 16. The National Guard would be housed in tent camps. In addition, Secretary Baker instructed camp planners "to economize on design, so far as possible."[68]

[68] Office of the Construction Division of the Army, *Report of the Chief of the Construction Division to the Secretary of War, 1918*; Plans published in Gibbs, "Exhibit 2-C."

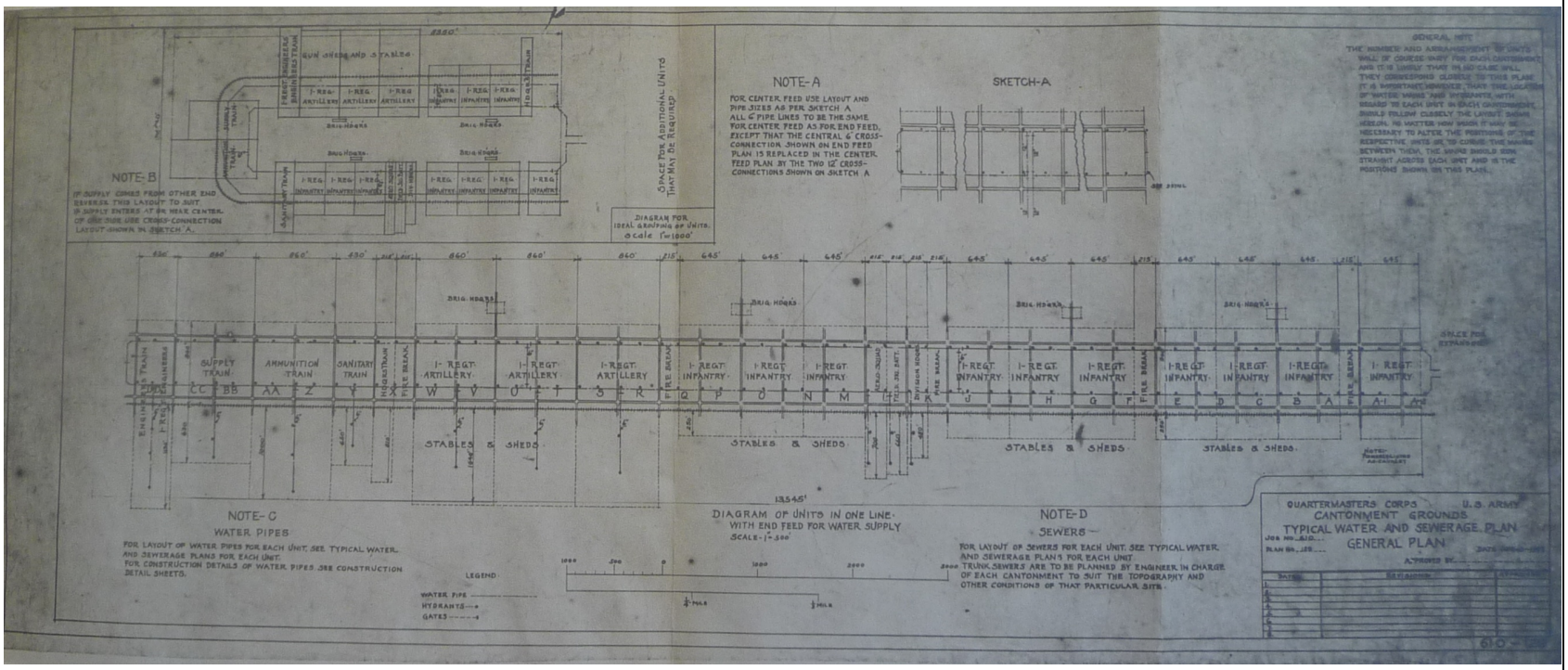

Figure 1.2: Sewerage Plan, Showing Typical Cantonment Arrangement, June 1917 (Top Left). Published in Gibbs, "Exhibit 2-C."

The typical cantonment plans dated June 1917 are still defined by the U shape, though a second main road has been added to the camps between each unit and the brigade headquarters buildings. The crosswise service roads remain, cutting between the two main roads to slice the U into rectangular blocks. A second railroad track, a siding, parallels the main line between it and the outermost main road.

Though the June scheme houses almost twice as many soldiers as the April one, it is at the same time more compressed, with only two-thirds the distance between service roads. Like in the preliminary plans, the June layouts show each regiment of infantry inhabiting one and one-half blocks, with two columns of barracks between each pair of service roads. In the June diagram, however, the soldiers are housed in two-story barracks with attached kitchens. The lavatory buildings are parallel, rather than perpendicular, to the barracks. The machine gun, supply, and headquarters companies are situated in a row between the infantry barracks and the main road, as in the April diagrams. But the June scheme has the machine gun company in a combined barrack-mess building identical to that housing the other soldiers, and the headquarters and supply companies are in square buildings attached to one another, also with interior kitchens. The post exchange is in the same row of buildings, with lavatories for the specialty companies between their barracks and the outer main road, rather than parallel to them. Storehouses are lined up against the siding track, and opposite the main track are stables, troughs, a wagon shed, a guard house, and a shop within a fenced corral. Opposite the inside main road from the infantrymen are the remaining community buildings (only the post exchange has moved to the outside of the barracks area since the April drawings), then a row of officers' quarters. Like the

enlisted barracks, the officers' buildings have interior kitchens, with smaller lavatories (two per building) between them and the parade grounds.

As in the April plans, in the June typical cantonment scheme the regiments of infantry (seven) and artillery (three) are ranged along both arms of the U, grouped into brigades. The brigade headquarters group—expanded to five buildings, excluding the latrines, from the single battalion headquarters building shown in the Construction and Repair Division plans—is located on the parade side of the group, at the end of one of the service roads. Also unchanged from the earlier scheme is the location of the supply and ammunition chains at the base of the U. But the engineers train has been relocated from the bottom of the U to the nearest end of one arm, directly adjacent to the brigade of artillery. The sanitary train is immediately opposite. The other groups, the aero squadron, the field signal battery, and the division headquarters, were located on a road connecting the two arms at the top of the U in the April diagram. In the second set of plans, these three units are halfway down one arm of the U, adjacent to one another and to one brigade of infantry. No road now cuts across the mouth of the U.

In all, besides the substitution of two-story for one-story barracks, the typical cantonment scheme changed little between April and June of 1917. Among the more noticeable revisions was the relocation of the headquarters group from a ceremonial to a central location; and, with the addition of a second major roadway, the clear division of the camp into city-type blocks.

But while their definition of city planning as the prediction of future development dovetailed nicely with Army requirements, the cantonment planners of World War I were also concerned with aesthetics, an aspect of camp planning to which Army officials paid little attention. Different planners defined the relationship between function and form in the military training camp differently: the more landscape-oriented planners concerned themselves with the

relationship of the built environment to nature; other planners argued for compositions that took aesthetics into account from the very beginning; and still another group of designers insisted that beauty would naturally follow from a carefully-ordered plan. In their various approaches to urban aesthetics, the cantonment planners proved themselves to be very much of their time. As Jon Peterson and others have shown,[69] the years just before and after World War I were a time of great intellectual turmoil for the burgeoning city planning profession, as proponents moved the practice away from its origins in landscape architecture and park planning; and as Olmsted and others effected a shift from the City Beautiful to the function-based City Practical approach to urban design.

L. V. Sheridan and Warren H. Manning looked to their training as landscape architects to bring a greater degree of beauty to their cantonment designs, advocating minimal tree removal, and encouraging the Army to consider planting schemes for the camps. Sheridan emphasized the link between the presence of shade trees and soldiers' comfort. "Under the stress of emergency construction, it is almost impossible to give careful thought to just what trees should be preserved," he acknowledged. But this did not let camp planners off the hook: "It is therefore strongly recommended," he concluded, "that the slogan adopted at the start of work at Camp Pike—that a tree can be cut down at any time but that it takes years to grow one—be followed at other camps."[70] According to Manning, the order to preserve trees where possible was soon confirmed by the War Department.[71]

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[69] Peterson, "The Birth of Organized City Planning."

[70] Lawrence V. Sheridan, "Planning a War Cantonment," in *Proceedings of the Tenth National Conference on City Planning* (Cambridge: Harvard University Press, 1918), 134-5.

[71] Manning, "Planning the Cantonments," 336.

Manning suggested that officers and draftees could execute planting plans at low cost, thus reducing "the extreme bareness of most of the cantonments."[72] Sheridan went in a different direction: he hoped to use Camp Pike as a demonstration project for the War Department. A successful planting scheme enacted there might convince officials to hire another group of consultants, these landscape architects, "to supervise the preparation of plans for the beautification of all the cantonments. Under such a policy," Sheridan explained, "the roughly built cities would finally be developed into really beautiful communities." Any less coordinated approach to the landscape architecture of the camps, such as putting each regiment in charge of the planting of its own area, would not have the same long-term effects on soldiers' health and happiness.[73]

Edward Bennett took a different approach to cantonment beautification. Camp aesthetics should be a primary consideration of the camp planner, not an afterthought as in the landscape architects' method, Bennett argued. His insistence that the achievement of beauty required conscious application on the part of the city planner was not surprising given Bennett's status as City-Beautiful icon; the City Beautiful movement, as its critics have pointed out, elevated the importance of monumental architecture and the framing of views to such an extent that it ignored certain social problems, including housing.

Bennett articulated his position on cantonment aesthetics at the tenth National Conference on City Planning, in a critique of Sheridan's design for Camp Pike. Sheridan had missed "a very fine opportunity to maintain the principles of city planning and to maintain the finer elements in distinction from those which were purely utilitarian," Bennett argued. Specifically, Sheridan had

[72] Ibid.

[73] Sheridan, "Planning a War Cantonment," 142.

located the quartermaster's distribution center at the center of the plan, where "its growth will more than ever tend to break up the central area, your drill ground, and disturb the order of the whole cantonment." Yes, the location of the distribution hub at the very center of the cantonment made the most practical sense, but Bennett speculated "that this might have been placed to one side and still been the center of distribution." He concluded: "I simply want to make the point that as city planners I think we should recognize that the utility idea is not necessarily inclusive of the form idea, or of fineness of form and arrangement."[74]

Yet another view with respect to the role of beauty in cantonment design was articulated by James S. Pray. Outsiders had criticized the uniformity of the camps as lacking in aesthetic merit: "It is not what you would call lovely from an architectural view-point," a reporter wrote of the Navy training camp at Quantico, Virginia. "Row on row of frame houses, one story high, ninety-eight feet long by twenty wide, stretching away from you with such monotony as to seem endless are, in fact, rather unlovely to the eye."[75] But Pray argued that this man and others had seen the camps while they were still under construction, with the attendant chaos of materials and crews, while the buildings still "suffer[ed] in appearance from a certain rawness inevitable with their newness." "When all this is allowed for, and it is borne in mind that these towns, instead of being built to enduring for many years . . . , are frankly temporary creations," Pray went on:

> it remains notable that some of these cantonments already have a considerable measure of organic beauty. When these strongly and clearly organized communities are really complete and have been subject to a few months of systematic use, they will be visually

[74] Bennett's comments were published in Sheridan, "Planning a War Cantonment," 145; Goodrich disagreed. In comments following Bennett's, he called the location of the quartermaster's distribution facilities "paramount." "I think the matter of form should be thrown to the wind. Very largely I believe not enough attention was given to this particular location, nor was enough care given to the location of main traffic ways."

[75] Lloyd, "Our Soldier Towns," 331.

> even more satisfying as to reasonableness in design and construction, fit better with their surroundings, and indeed possess a surprising amount of functional interest and ordered beauty.[76]

Even Sheridan, focused though he was on the potential of skilled landscaping to improve the cantonments' appearance, observed that successful functional planning could result in pleasing forms. In the rush to make the training camps ready for the soldiers' arrival, he wrote, "there is little time left for deliberate study of its aesthetic possibilities. Utility is the dominant objective of the design, and economy, particularly in times of excessive expenditures for war purposes is the second consideration." Sheridan concluded: "But, as in many other designs primarily adapted to the uses to be made of them, a considerable beauty follows as a result of fitness to purpose."[77]

Pray and Sheridan's assessment of the relationship between form and function had been summarized several years earlier by another cantonment planner, Richard Schermerhorn, Jr. In an address to the Brooklyn Engineers' Club, Schermerhorn asked which of the two competing planning orientations, the City Beautiful or the City Practical, was most important. "By all means should City Practical come first," he concluded. Without considering the *uses* to which groups of buildings, parks, and boulevards would be put, the city's beauty would be reduced to "scattering examples of decorative architecture, attractive sculpture and imposing monuments. If the City Practical is *first realized there is* no doubt that the City Beautiful will follow as a matter of course."[78]

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[76] James Sturgis Pray, "Planning the Cantonments," *Landscape Architecture* 8, no. 1 (October 1917): 16-17.

[77] Sheridan, "Planning a War Cantonment," 141.

[78] Richard Schermerhorn, Jr., "City Planning," *Proceedings* (Brooklyn Engineer's Club) 16 (1912):102-143, http://www.library.cornell.edu/Reps/DOCS/schermer.htm (accessed September 9, 2012; emphasis Schermerhorn's).

Planning for Future Growth

With the Quartermaster Corps's typical cantonment plans in hand, the civilian planners set out in city planner-engineer pairs to inspect the training camp sites chosen by the Army.[79] After reporting back to Washington on the conditions at each location, they began preparing particular plans for their assigned sites. Per instructions issued by the Cantonment Division, the planners laid out each cantonment according to one overarching requirement: the anticipation of future expansion.

For the Army, expansibility was an important practical consideration given the uncertainty surrounding the American military mission in Europe. Growth would come in one of two forms: as the addition of personnel to an existing unit; or as the addition of new units to the division as a whole. Thus the camp plan had to be flexible both as a whole and on the level of the individual module.[80]

For the cantonment planners, on the other hand, preparing for future development was not just a stop-gap acknowledgment of how much about their project remained undetermined; it was the very definition of the practice of city planning. In his introduction to the 1916 volume *City*

[79] Gibbs, "Exhibit 2-C," 3, 6. The first field team left Washington on May 21, 1917.; Olmsted and the training-camp planners complained that the sites chosen by Army officers gave little consideration to aesthetic or even practical engineering requirements. Wrote L. V. Sheridan: "[The site selection] boards did not in all cases consider the adaptability of the sites to the organization of an intelligent city plan. Some of the plans were forced to be cramped or not capable of expansion on account of the natural confines of the tracts. Others had to be content with excessive grades on the main traffic arteries, or else sacrifice orderliness in their arrangement. The appointment of Boards composed of city planners and engineers as well as army officers would have eliminated many of these difficulties." Sheridan also had a problem with the way community boosters affected site selection. In the case of his own project, for Camp Pike, Sheridan estimated that the Army would have saved "several hundred thousand dollars" in grading costs, had officers located the cantonment away from the site gifted by the town of Little Rock. The distance from the site to the nearest rail line, moreover, delayed construction. Crews moved materials by truck almost five miles from track to camp, when a different location would have eliminated this intermediary transport—and negated the need to build a spur line to the cantonment. "Competition [between localities] was to be expected and viewed from the standpoint of civic enterprise, it cannot be strongly censured," Sheridan summarized, "but the fact remains that such influences should have had not weight whatever in the determination of location." Sheridan, "Planning a War Cantonment," 127.

[80] Gibbs, "Exhibit 2-C," 3-7.

Planning, edited by John Nolen, Olmsted wrote: "The new and significant fact for which this new term, 'city-planning,' stands is a growing appreciation of a city's organic unity, of the interdependence of its diverse elements, and of the profound and inexorable manner in which the future of this great organic unit is controlled by the actions and omissions of today."[81]

The training-camp planners articulated this vision of city planning in their work outside the Army. In his 1910 plan for Cincinnati, for instance, George Kessler complained that American cities had in the past been laid out only to meet the needs of the present, "leaving to the holder of real estate or land the actual planning for the future city"; in particular, city-builders failed to consider communication lines "and the possible need of reaching further out into the country as the city grows, and still less in tying new things into the old." Thus much of Kessler's work, like that of his contemporaries, was an effort at *rebuilding* rather than building from scratch.[82] For those city planners commissioned to lay out new towns, proper planning meant avoiding such reconstruction. B. L. Lambuth[83] praised S. Herbert Hare's postwar plan for the city of Longview on the basis of his use of a "skeletal" plan as recommended by developer J. C. Nichols. In this kind of plan "the entire city site is completely planned and zoned and the actual development of each district is started in a small way in its proper relationship to a finished whole," Lambuth explained, thus saving the town's residents a substantial sum of money in the long run.[84]

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[81] Frederick Law Olmsted, Jr., "Introduction," in *City Planning: A Series of Papers Presenting the Essential Elements of a City Plan*, ed. John Nolen (New York: D. Appleton and Company, 1916), 1, http://www.library.cornell.edu/Reps/DOCS/olmst_16.htm (accessed September 9, 2012).

[82] George E. Kessler, "The Plan of Cincinnati," *American City* 2, no. 1 (January 1910): 3.

[83] Lambuth ran the Real Estate Department of the Longview Company, the town's developer.

[84] Lambuth's comments were published in Hare, "The Planning of the Industrial City of Longview," 763.

In terms of cantonment planning, achieving expansibility meant doing away with the Quartermaster Corps's U-shaped plan in favor of a radial scheme along the lines of Burnham and Bennett's 1909 proposal for Chicago. Several planners adopted the typical U shape almost exactly in their particular plans.[85] At Camp Upton, Yaphank, Long Island, Owen Brainard and Ferruccio Vitale replicated the U precisely, altering the typical plan only by relocating the division headquarters from one arm of the U to a hilly road connecting the two arms at their midpoints. Carl F. Pilat's plan for Camp Lewis also shows a high degree of fidelity to the typical U, though its two arms flare outward at their ends, probably to accommodate the site's topography. At other cantonments the layout resembles less a U than two parallel bars of units: see Camps Dix, Jackson, Meade, Sherman, and Travis. At Camp Pike, George E. Kessler and L. V. Sheridan came up with a similar plan, arranging the camp's units into two side-by-side lines, one straight and one with a diagonal arm, again an adjustment for the local topography. Camp Funston, at Fort Riley, Kansas, was laid out by J. S. Pray and S. Herbert Hare according to what might be called a three-bar scheme.

Harlan P. Kelsey's plan for Camp Zachary Taylor in Louisville, Kentucky would also have fallen into the U or double-bar category had not the circumstances of the site's acquisition been so unusual. The site, which was donated to the federal government by the Audubon Park Realty Company, nestles around the developer's recently-completed Audubon Country Club and Audubon Park residential community. Kelsey, faced with the challenge of fitting a U-shaped typical plan into a U-shaped site, arranged double rows of infantry units at right angles to one another at the eastern corner of the site. The other facilities he wrapped around the north and west sides of the residential development.

[85] All sixteen plans were published in *National Army Cantonments: Plans and Photographs, June 1918* (U.S.A.: Construction Division, War Department, 1918).

Planners at two other camps adopted what came to be known as the "shoe-string" configuration, arranging the units in one long line. At Camp Custer, Battle Creek, Michigan, T. W. Sears arrayed the cantonment's units along a line curved to approximate the course of the Michigan Central Railroad, and the Kalamazoo River beyond. Camp Lee, at Petersburg, Virginia (J. L. Greenleaf), is either a very open U or a very curved shoe-string.

But the U, double-bar, and shoe-string plans had their drawbacks, particularly with respect to future growth. Units could be added to the shoe-string plans at either end, but doing so would make the distance between the start and finish of the camp—already three miles under the typical scheme[86]—so large as to make intra-camp communication and movement difficult. Similarly, a U or double-bar plan could only be expanded horizontally without recourse to stacking units (as at Camp Funston). As Sheridan explained in reference to Camp Pike's double-bar: "In one way in particular the . . . plan failed. That was in the provision for expansion. Compactness and orderliness were well developed but the addition of more units would have disrupted its organization."[87]

Thus, at the remaining camps the planners departed from the U plan and instead projected rows of units from a central point. The L-shaped plans at Camps Gordon and Dodge represent half-measures in this respect. One can imagine that A. F. Brinckerhoff and C. N. Lowrie built a right a right-angle into the plan for Camp Gordon, near Atlanta, not out of a concern for extensibility so much as for practical reasons having to do with the arrangement of the railroad lines or the site's topography; otherwise, the headquarters group would be located at the apex of the angle rather than at the end of one of the arms. In Robert Wheelwright's plan for Camp

[86] Kellaway, "Camp Devens," 71.

[87] Sheridan, "Planning a War Cantonment," 136.

Dodge, in Des Moines, Iowa, the hospital group, the arrangement of the various groups seems more deliberate. There, the field signal battalion, the supply, ammunition, and sanitary trains, and the infantry regiments are arrayed along three lines extending out from or parallel to the main railroad tracks, roughly centered on the camp's civic center.

Two cantonment schemes, H. J. Kellaway's for Camp Devens at Ayer, Massachusetts, and Edward H. Bennett's for Camp Grant, at Rockford Illinois (see figures 1.3 and 1.4), departed most radically from the typical U plans in their concern for expansibility. At first glance, Kellaway's layout looks like a cross between a double-bar plan and a shoe-string plan, with most of the infantry units set in two parallel rows, the remaining units forming a broad W from the end of the infantry bars in the west to Robbin's Pond in the south. But Kellaway's arrangement, which was born of Devens's complicated topographical situation, in fact exploded the logic of the Quartermaster Corps's ideal scheme. Kellaway explained:

> In making the study it was at once evident that the typical open-end horseshoe layout would be impossible, and that a new scheme was needed to fit the topography. With this in mind, the units, plotted on plan at the scale of the topographic map, were cut up into strips like city blocks and fitted like a picture puzzle about the topography until a simple arrangement could be obtained relating to the circulating railroad (afterward abandoned by the Cantonment Office in all camps) and to the highways.[88]

[88] Kellaway, "Camp Devens," 72.

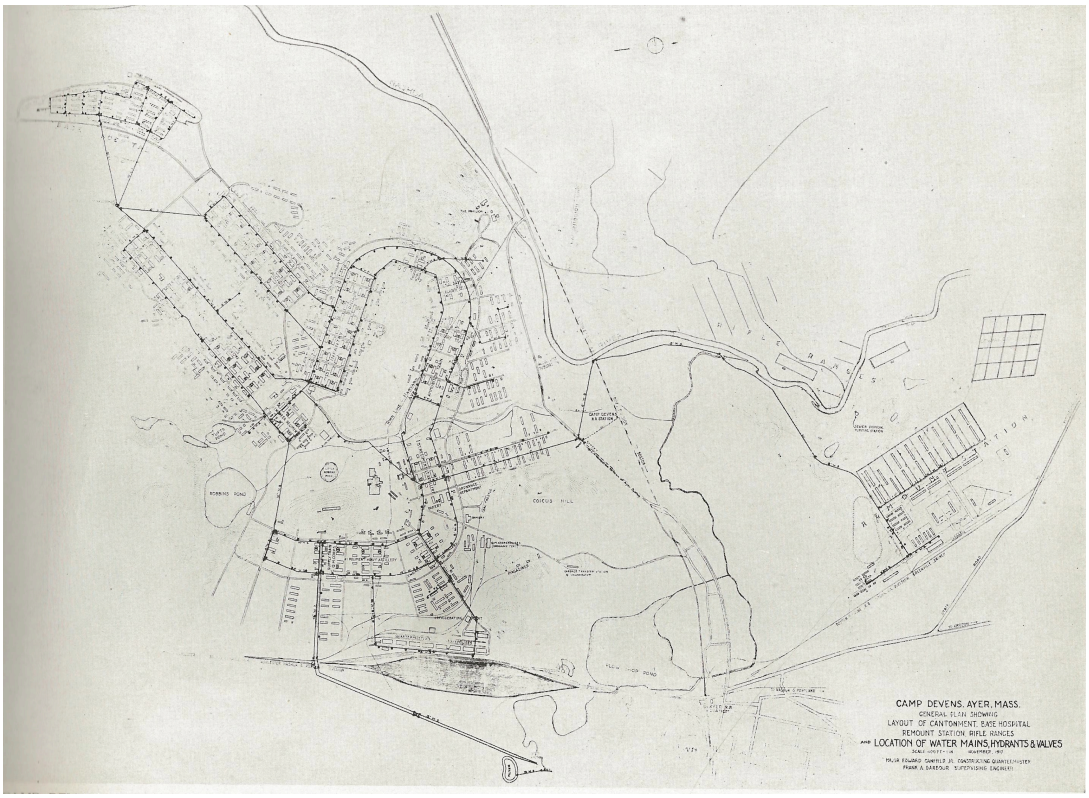

Figure 1.3: Herbert J. Kellaway, Plan of Camp Devens. Published in *National Army Cantonments: Plans and Photographs, June 1918* (War Department, Construction Division, 1918).

Figure 1.4: Edward H. Bennett, Plan of Camp Grant. Published in *National Army Cantonments*.

In Kellaway's plan for Camp Devens, the location of the headquarters group at the center of the W is crucial: it transforms the plan from an amalgamation of other types into an entirely radial scheme in which rows of infantry buildings (to the west and northwest) and columns of artillery buildings (to the east and northeast) extend out from a single point, the camp's institutional and geographical center.

In Edward H. Bennett's plan for Camp Grant, at Rockford, Illinois, the symbolic import of the headquarters group as cantonment center was even more well defined, as he situated it between the Rock River and a traffic circle uniting the two branches of the camp. To the north of the headquarters group stretch the engineers, supply, ammunition, and motor pool groups, capped by the base hospital; to the southwest is a U-shaped arrangement of infantry brigades around a secondary center and traffic circle. In Bennett's design, the two-dimensional scheme

proposed by the Quartermaster Corps is transformed into a complete city plan with possibilities for expansion in every direction.

Bennett and Kellaway's solution to the expansibility problem—the combination of an urban grid with diagonal streets connecting the city center to the outermost sections of the city—was not an on-the-spot innovation. Rather, the radial plan was a defining characteristic of the City Beautiful tradition within which most of the cantonment planners were trained. Contemporary observers, including camp planner Richard Schermerhorn, Jr., traced the inspiration for the City Beautiful's diagonal boulevards to Baron Haussmann's 1850-1870 renovation of Paris under Napoleon Bonaparte[89]. In the United States, the first radial plan for a major city was the 1901 McMillan Plan for Washington, DC, on which Olmsted and Daniel Burnham collaborated with architect Charles McKim and sculptor Augustus St. Gaudens.[90] The decade that followed saw an explosion of City Beautiful proposals for urban areas all over the United States, among them: Harrisburg, Pennsylvania, for which Warren Manning served as landscape architect; Detroit, on which Olmsted and C. M. Robinson reported; Baltimore, on which Olmsted collaborated with two others; Kansas City, Missouri, in a plan by George Kessler; Cincinnati, also planned by George Kessler; and Columbus, Ohio, for which C. N. Lowrie served as landscape architect.[91]

The 1909 plan for Chicago, prepared by Daniel Burnham and E. H. Bennett (see figure 1.5), was the culmination of these early efforts and served as the model for later plans, including perhaps Bennett's plan for Camp Grant. In fact, the plan for the Illinois cantonment resembles a

[89] Schermerhorn, "City Planning."

[90] Peter Hall, *Cities of Tomorrow*, updated edition (Malden, MA: Blackwell Publishers, Inc., 2000), 177-8.

[91] Schermerhorn, "City Planning."

much-reduced version of the Chicago plan, stretching as it does along a waterway, with a grand circle at its center. The transfer of the City Beautiful approach from bustling metropolis to built-from-scratch Army city made a certain amount of sense, as it did the same things for each place: it connected the inner- and outermost sections of the city and organized its future growth; it set the community's ceremonial center apart from the rest of the city; and it established a spatial hierarchy between city center and periphery, and along and between the major boulevards.

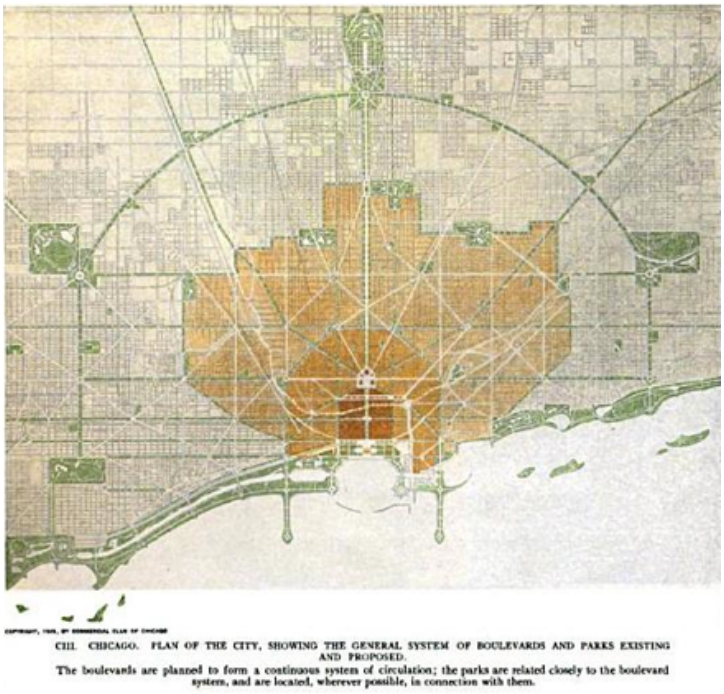

Figure 1.5: Daniel H. Burnham and Edward H. Bennett. Plan of Chicago, 1909. Published in *Plan of Chicago* (Chicago: The Commercial Club, 1909).

Planning as Process, Not Product

The cantonment planners heralded a third, less visible aspect of their war work as a defining feature of the profession of city planning: the cantonment plans were the products not of a single master designer, but of a collaboration of experts in architecture and landscape architecture, engineering, sanitation, and military protocol. This shift away from the

understanding of urban design as artistic product and towards planning as process was again part of the transition out of the City Beautiful era. Olmsted in particular had by the start of World War I developed a sophisticated critique of aesthetically-oriented planning, and the extent to which it assigned a single expert—the master planner—responsibility for solving the complex physical, social, and economic problems the modern city faced.[92]

The success of the cantonment planning process appeared to vindicate exactly the kind of cooperative enterprise that Olmsted promoted. From the beginning of their engagement in the Army program, the camp planners were never alone; they made their preliminary site visits, for example, in the company of a civilian engineer, and the execution of their plans was overseen by an Army officer, the camp Constructing Quartermaster. "In this way," wrote Pray, "by cooperation from the start between men of different special trainings, many mistakes which would have been made by any one of them alone were avoided, and particularly was it possible in the problem as a whole to reach quicker decisions, thus speeding up the whole preliminary investigation and planning, and hastening the beginning of construction."[93]

Within two decades of the Great War's end, the definition of city planning as a cooperative endeavor had been cemented, at least at Harvard University, home of the first graduate school program in city planning. In 1934 Henry Hubbard, a cantonment planner who taught in that department and who one decade earlier had co-founded the journal *City Planning*,[94] wrote that city planning was "broader than" architecture, landscape architecture, or engineering, "and is the result of their cooperation with one another and with many other

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[92] Peterson, "The Birth of Organized City Planning," 129-131.

[93] Pray, "Planning the Cantonments," 3.

[94] Eran Ben-Joseph, "Henry V. Hubbard, 1875-1947," *Workers' Paradise: The Forgotten Communities of World War I*, http://web.mit.edu/ebj/www/ww1/Biography-Hubbard.html (accessed September 9, 2012).

professions and businesses." "City planning is a cooperative enterprise in which no man is likely to succeed unless he possess in marked degree the ability to work in harmony with others,—professional men, citizens, political leaders, and others," Hubbard went on. "The task of a city planner is inevitably that of a coordinator."[95]

Defining the Ideal Cantonment

The cantonment planners, many of whom continued to work for the Army until war's end, did not just infuse their individual designs with concerns drawn from their broader experience in city planning. In early 1918, they had an opportunity to influence the future of the camp-planning program as a whole. Beginning February 11, Lowrie, Kelsey, Hare, Wheelwright, Kessler, Kellaway, Carl R. Parker and W. D. Cook, Jr.[96] travelled to all thirty-two Army cantonments and National Guard camps on a tour of inspection for the Cantonment Division. (The National Guard tent camps were laid out by Army staff according to typical plans, but without the advice of civilian planners.) The eight men, called "supervising planners" by the Army, issued reports on particular issues related to expansion, and provided the Cantonment Division staff with feedback that would be used to compile a new typical cantonment scheme.[97]

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[95] Henry V. Hubbard and Howard K. Menhinick, "City Planning as a Professional Career," *City Planning* 8, no. 2 (1932): 82.

[96] Carl Rust Parker worked for the Olmsted Brothers firm both before and after World War I. During the war, he spent six months as principal civilian assistant to the Camp Planning Section of the Construction Division. He was then a manager for the Town Planning Division of the USHC. Theresa Mattor, "Biography of Carl Rust Parker," *The Cultural Landscape Foundation*, http://tclf.org/pioneer/carl-rust-parker/biography-carl-rust-parker (accessed September 9, 2012); W. D. Cook, Jr., was president of the Pacific Coast Society of Landscape Architects, a chapter of ASLA, after the war, "Notes and Comments," *Architect and Engineer* 63, no. 1 (October 1920): 112.

[97] Gibbs, "Exhibit 2-C," 12-13. The supervising planners were asked to determine locations for additional Quartermaster Depot storehouses, and to report on the status of the hospital group at each camp. They were also asked to propose a course of expansion for what was now being called the camp's "civic center," the cluster of recreation and service buildings largely staffed by outside agencies.

The resulting typical cantonment plan (see figure 1.6) was a double-bar scheme, and thus was not very different in terms of overall arrangement from the previous year's plan. But while the Cantonment Division may not have adopted a radial plan like Bennett's for Camp Grant, it did leave the final form of the camp almost entirely to the discretion of the planner. The new instructions to planners published in April 1918 read: "[T]he typical plan for the layout of the camp can be modified . . . to any extent, provided the minimum dimensions are not reduced, and provided the military units are kept and not separated by part of any other unit."[98] In addition, like the instructions with which the cantonment planners had originally entered the field in mid-1917, the April 1918 edition privileged expansibility over other concerns. The directive that "Ample space for expansion should be available" appears early on in the list of instructions, and is repeated several times thereafter.[99]

[98] Gibbs, "Exhibit 2-C," 14; The "General Note" on the February 27, 1918 typical cantonment plan begins similarly: "The number and arrangement of units will of course vary for each cantonment and it is likely that in no case will they correspond closely to this plan." Plan published in Gibbs, "Exhibit 2-C."

[99] Gibbs, "Exhibit 2-C," 14.

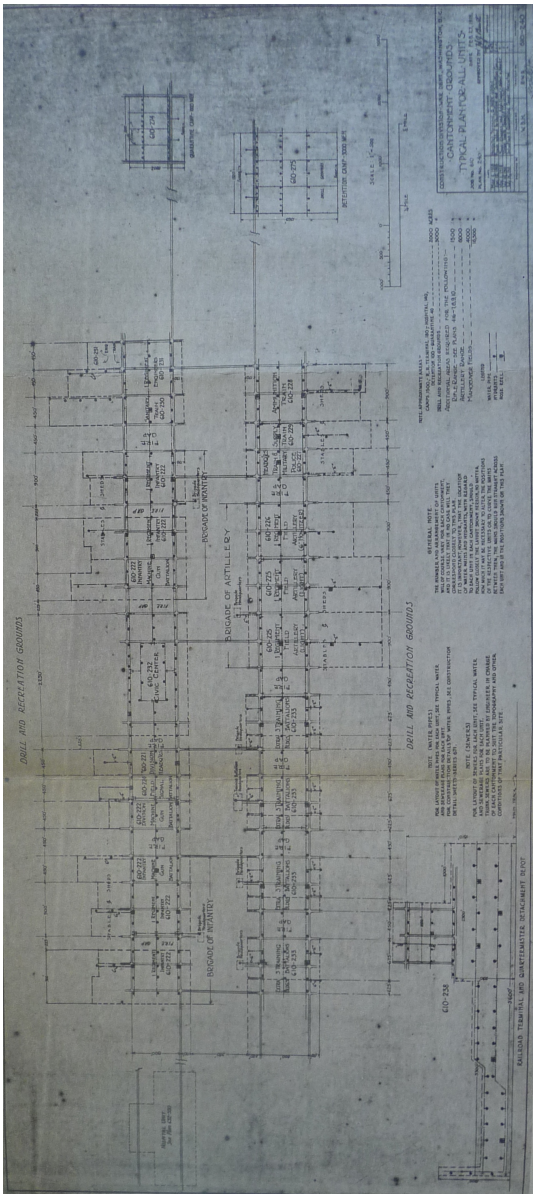

Figure 1.6: Typical Cantonment Plan, February 1918. Published in Gibbs, "Exhibit 2-C."

Sheridan's and Manning's concern for careful clearing also made it onto the revised instructions to planners. Note 29, titled "trees," explains: "Existing trees should be preserved among the buildings and along the roads especially . . . . Shade is absolutely necessary to the

health and comfort of the soldiers in the Summer time. All trees designated to be preserved are to be protected by the contractors and by the camp guard."[100]

The 1918 instructions to planners differ most noticeably from those issued the previous year in their emphasis on the camp as a centralized community. To what extent this change was due to the influence of the supervising planners, or to the practical experience of the officers and draftees in the camps is unclear, but the result is the same: from February 1918, Army camps were to be planned as communities with a definable center, rather than as simple aggregations of units and services. In other words, over the period of time during which civilian city planners were involved in shaping the Army's training camps, those camps came more and more to resemble the civilian communities that were the planners' typical subjects.

In keeping with both the Army program and the City Beautiful model of urban redevelopment, the 1918 instructions to planners highlighted two kinds of central spaces: a park-like parade ground; and a "civic center" comprising the camp post office, post exchange, theater, library, gymnasium, and YMCA auditorium. The open space at the center of the camp, located in the typical plans between the two bars, served first as a fire break—a crucial consideration in a city built entirely of wood. But it was second " . . . a parade ground and general public open space, and no public buildings should be placed in this area." Only the Division Headquarters, the equivalent of a civilian community's government buildings, could occupy part of the parade ground.[101]

City planners during this era prioritized the location of a civic center, a monumental group of buildings intended for use by the entire city, at the geographical center of any

[100] Ibid., 17.

[101] Ibid., 14.

community plan. Per the City Beautiful's brand of environmental determinism, a civic center did not just constitute the apex of a city's organizational scheme, the plaza at which all roads met; it also defined the character of its residents' public discourse and comportment. As Bennett and William E. Parsons, in their postwar plan for Joliet, Illinois pointed out, planners typically located city and county buildings adjacent to one another not just for convenience, but also "as an expression of civic unity."[102]

The training-camp planners were at least partly responsible for the Army's inclusion of a civic center in its 1918 typical cantonment plans. The June 1917 Quartermaster Corps scheme had suggested that the Division Headquarters should be centrally located; many of the planners went further, giving the headquarters group a particular architectural treatment. C. W. Leavitt, for instance, placed the Division Headquarters inside a traffic circle between the two rows of infantry units at Camp Dix. Other planners similarly arranged the YMCA and other welfare buildings together in a central location: see Owen Brainard's plan for Camp Meade, and especially the Headquarters Hill Road group at Camp Upton (Brainard and Ferrucio Vitale; see figure 1.7). In an address to the 1918 National Conference on City Planning, Sheridan remarked upon how many recreational and other community buildings had been added to the training camps over the course of the war. "Grouped together in a central location," he concluded, "they would serve their purposes most efficiently, and at the same time would add to the appearance of the camp."[103]

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[102] Edward H. Bennett and Wm. E. Parsons, *Plan of Joliet Illinois: A Report on a City Plan*, preliminary copy, 29, Frances Loeb Library, Harvard University. Though such an arrangement was not possible at the current time in Joliet, Bennett and Parsons advocated setting aside land for a future municipal civic center.

[103] Sheridan, "Planning a War Cantonment," 134.

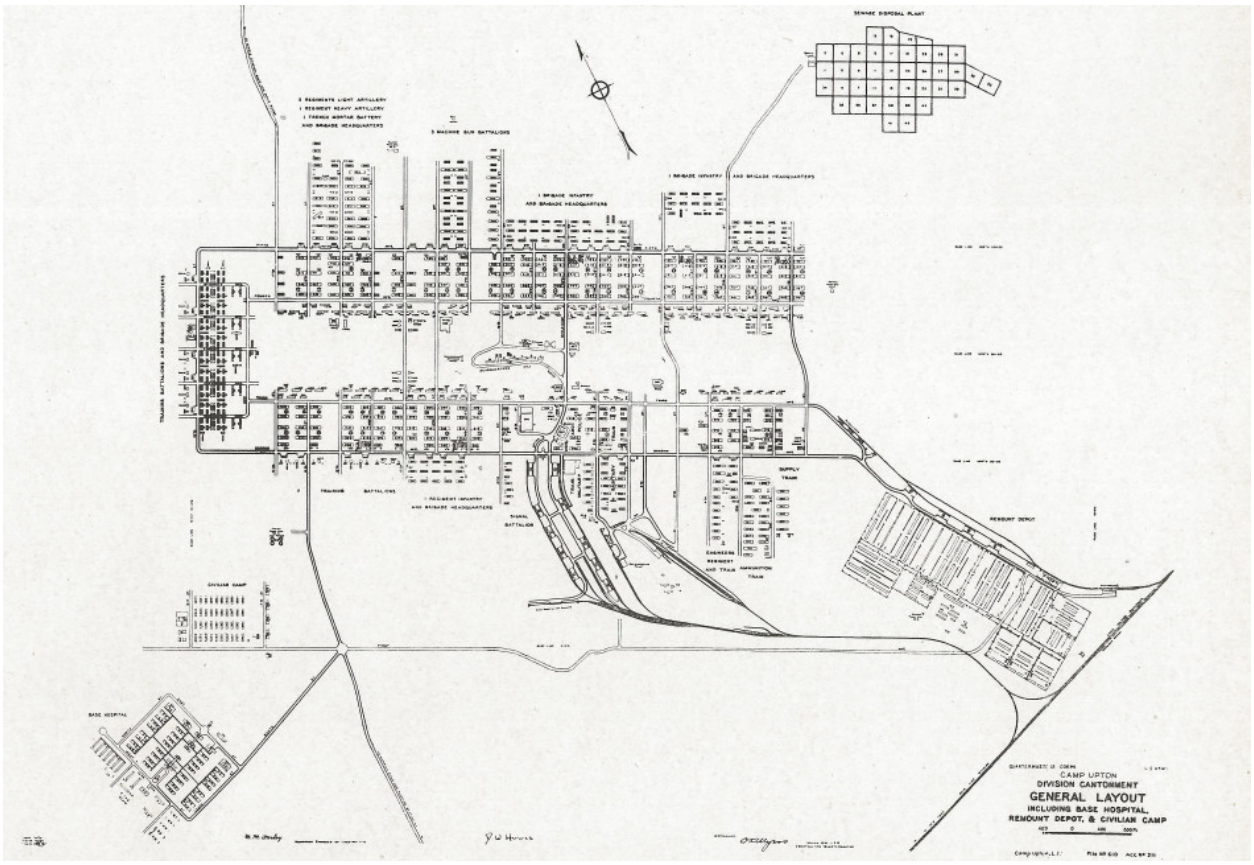
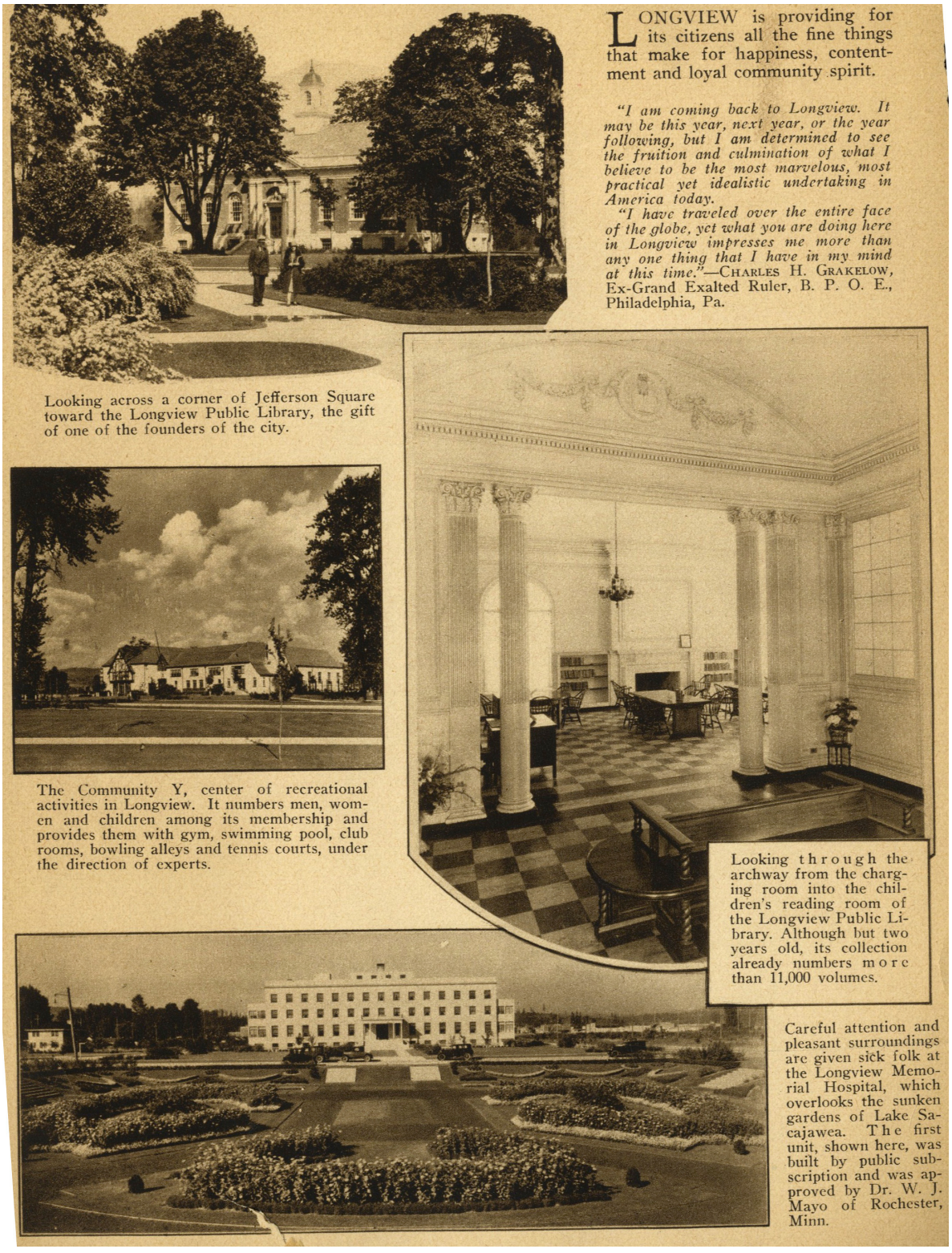


Figure 1.7: Plan of Camp Upton, Showing Headquarters Hill at Center. Published in *National Army Cantonments*.

The revised plans published by the Quartermaster Corps in the spring of 1918 included a scheme for a typical camp civic center, with welfare and recreation buildings arranged on all four sides of a rectangular open space. The revised typical cantonment plan recommended situating the civic center at the center of one of the two rows of infantry and artillery units. Coincidentally or not, this simple arrangement was replicated almost exactly by S. Herbert Hare in Longview, his 1923 Washington state new town. "The first step in the planning of Longview was to create a civic center in the heart of the city," explained a brochure for the town.[104] Photographs taken across the rectangular civic center green (see figure 1.8) show a YMCA building and a library,

[104] *Longview, Washington: A Wonder City in a Wonderland*, Frances Loeb Library, Harvard University.

among other structures—permanent versions of the same facilities visited by soldiers in Army training camps.



LONGVIEW is providing for its citizens all the fine things that make for happiness, contentment and loyal community spirit.

"I am coming back to Longview. It may be this year, next year, or the year following, but I am determined to see the fruition and culmination of what I believe to be the most marvelous, most practical yet idealistic undertaking in America today.

"I have traveled over the entire face of the globe, yet what you are doing here in Longview impresses me more than any one thing that I have in my mind at this time."—CHARLES H. GRAKELOW, Ex-Grand Exalted Ruler, B. P. O. E., Philadelphia, Pa.

Looking across a corner of Jefferson Square toward the Longview Public Library, the gift of one of the founders of the city.

The Community Y, center of recreational activities in Longview. It numbers men, women and children among its membership and provides them with gym, swimming pool, club rooms, bowling alleys and tennis courts, under the direction of experts.

Looking through the archway from the charging room into the children's reading room of the Longview Public Library. Although but two years old, its collection already numbers more than 11,000 volumes.

Careful attention and pleasant surroundings are given sick folk at the Longview Memorial Hospital, which overlooks the sunken gardens of Lake Sacajawea. The first unit, shown here, was built by public subscription and was approved by Dr. W. J. Mayo of Rochester, Minn.

Figure 1.8: Page of Longview, Washington Brochure Showing Civic Center. In *Longview, Washington: A Wonder City in a Wonderland*, Frances Loeb Library, Harvard University

The 1918 typical cantonment plans and instructions to planners reveal the maturation of the concept of the Army camp as "city," complete not just with industrial facilities for the manufacture of soldiers, but also the open space, recreational facilities, and even shade trees important to the inhabitants' well-being. The new heart of the cantonment, the civic center and parade ground, would pump life to the cells of the city, the self-contained units of officers and men. Creating an Army cantonment, by implication, was more than just a technical challenge, fitting a typical plan to varied local conditions; it was an exercise in community building.

World War I and the Professionalization of City Planning

Both Army officials and the planners themselves were satisfied with the results of the cantonment-planning experiment. In a postwar report, the head of the Cantonment Division's Section on Camp Planning compared the work of the camp designers to other great construction projects of the time, both military and civilian. The result, he thought, boded well for the cantonment's position in history. "With the [smaller wartime camps] the great army camps may compare unfavorably, and this may be in part due to the layouts adopted," he wrote,

> but on the other hand, if the great camps are compared with large concentration centres built before the cantonments were planned, such as the camps for army and navy recruiting, the average contractors' camp, the ordinary mining or factory town, and the undirected plan of city suburbs, they show the advantages of systematic planning, reasonable grouping of buildings, concentration of specialized activities, and a general attempt to design and produce a well balanced and orderly community.[105]

Cantonment planner James Pray, writing during the war, had similarly concluded, "The employment of civilian experts as planners has been altogether justified by the results."[106] An

[105] Gibbs, "Exhibit 2-C," 22

[106] Pray, "Planning the Cantonments," 17.

identical claim undergirded the formation of the first graduate program in city planning, at Harvard University, in 1922. According to a notice in the school's Official Register:

> During the period of our war emergency, the economic value of the landscape architect's training in the large-scale adaptation of land for use was demonstrated more clearly than ever before, —in residential developments for industrial workers and in the laying-out of military and naval camps and cantonments.[107]

Cantonment planner (and head of Harvard's School of Landscape Architecture) J. S. Pray laid out the case most systematically in an April 1919 editorial in *Landscape Architecture*: The wartime work by America's architects and landscape architects did not *create* the new field of city planning. Rather, the sheer amount of construction carried out during the war with the guidance of America's planning experts "has brought strikingly before the public some of those principles which peacetime work in town planning has been more gradually evolving." The cantonment planners had furthermore demonstrated—to themselves as well as to the people of the United States—that cooperation among specialists of different backgrounds was fundamental to solving any large-scale planning problem. The cooperation of architects, landscape architects, and engineers "in the design of large areas was not new but the continuance of a practice which some of our American cities had already adopted," the Pray argued. "The fact that this cooperation is essential, however, and the fact that a comprehensive grasp of the larger principles of town planning is necessary for all those cooperating, are among the important lessons of the war to professional practitioners" in the building arts.[108]

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[107] "School of Landscape Architecture, 1922-23," *Supplement to Official Register of Harvard University* 19, no. 39 (June 28, 1922): 9-10, http://books.google.com/books?id=RJA4AAAAMAAJ (accessed September 9, 2012). Thanks to Iddo Ginat for tracking down this reference.

[108] J. S. Pray, "Training in the Planning and Development of Town and Country," *Landscape Architecture* 9, no. 3 (April 1919): 171, http://books.google.com/books?id=ReYyAQAAMAAJ (accessed December 5, 2012).

Referencing the new course in city planning at Harvard, Pray assured *Landscape Architecture*'s readers that the school would "take full advantage of the lessons drawn from the war-time experience of its staff, nearly all of whom were in the service of the Government in emergency design and construction work." The library of Harvard's School of Landscape Architecture, moreover, was already stocked with "a most interesting collection of material relating to problems on which practitioners of town planning have been engaged in the United States, and to problems of European Reconstruction."[109] The Great War, in other words, would literally constitute the lessons and texts of the next generation of American city planners.

Conclusion

Upon the United States's entry into World War I, military officials turned to civilian design professionals to lay out the draft Army's training camps. The cantonment designers—trained in architecture, landscape architecture, and engineering, and with a shared interest in the burgeoning city-planning movement—brought recently-formulated theories of *civilian* community design to bear on their Army work. Specifically, the camp planners considered the necessity of planning for future development, the relationship between function and form, and the nature of city planning as a cooperative enterprise in combination with the Army program.

As the war progressed and recruits filled the training camps, the planners contributed to the redefinition of the Army cantonment as a community whose shared sense of purpose could be influenced by its physical surroundings. The preparation of a new set of typical cantonment plans in early 1918 offered the civilian designers not just an opportunity to review their own experience in the camp planning, but also to influence the design of future cantonments.

[109] Ibid., 172.

For the civilian planners of America's Great War training camps, the success of the cantonment-planning program was evidence of the economic and social usefulness of city planning more generally. They used their experience working for the Army to argue in favor of the professionalization of city planning through the establishment of graduate programs and the publication of disciplinary journals. Thus the cantonments of the Great War were the training grounds not just of soldiers, but also of the designers of America's twentieth-century cities.

Chapter 2: Building a Moral Army: The Training-Camp Architecture of the YMCA and YWCA

Introduction

Writing just after World War I in praise of the YMCA at Fort Leavenworth, Army chaplain Frank C. Rideout surmised, "It has been for many months a slogan with the Recruiting service that 'The Army Builds Men,' but that slogan cannot be applied to any organization, either in the army or in civilian life, any more truly than it can be applied to the Army YMCA in Fort Leavenworth." Rideout continued: "[The YMCA has] been true to the best traditions of that glorious organization in striving to 'Build men' along the three-fold lines of 'Body Mind and Spirit.'"[110]

As Rideout's letter suggests, the Progressive-Era missions of the Young Men's Christian Association (YMCA) and its sister organization, the Young Women's Christian Association (YWCA),[111] did to a certain extent resemble that of United States Army. Like Army officers, the leaders of the YMCA and YWCA were charged with molding early-adult men and, in the case of the YWCA, women, in a particular image, and with defending a set of prescribed values against outside attack. But while the Army focused on physical training, members of the YMCA and the

[110] Frank C. Rideout to James Taylor, April 1, 1921. Army Camps--Miscellaneous ca. 1918. Armed Services: World War I (Y.USA.4-1). Kautz Family YMCA Archives. University of Minnesota Libraries.

[111] The YWCA was not affiliated in any official way with the YMCA, but its late-nineteenth century founders modeled the women's organization on the men's group. Daphne Spain, *How Women Saved the City* (Minneapolis: University of Minnesota Press, 2001), 191.

YWCA understood themselves to be building *character*, encouraging young men and women to hold themselves to Victorian moral standards in the face of rapid social change.[112]

The programs of the YMCA and the YWCA were also literally constructive, in that both organizations designed and built facilities for young people's education and recreation in cities across the United States. As adherents of the Social Gospel, members of the YMCA and the YWCA understood urban problems, and specifically urban poverty, to be born of structural conditions rather than personal failings.[113] Social problems, accordingly, could be addressed by altering the physical environment in which vulnerable populations lived.[114] The key to the Progressive-Era building programs of both organizations was reproducing within the city the moral and physical characteristics of the middle-class suburban home.[115]

During World War I, at the invitation of President Wilson's anti-prostitution agency, both the YMCA and the YWCA transferred their attention from urban spaces to the Army training camps. Within the cantonments both welfare agencies constructed buildings designed by their own architects to house their recreational programs. The YMCA huts and YWCA hostess houses differed substantially in terms of both architecture and the activities taking place within them. But their builders shared a conviction that the spaces they created provided a necessary antidote to the physical and aesthetic severity of Army life.

As sites of a project to shore up traditional moral values against a social and physical environment that appeared to threaten the same, the YMCA huts and YWCA hostess houses

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[112] Paula Lupkin, *Manhood Factories: YMCA Architecture and the Making of Modern Urban Culture* (Minneapolis: University of Minnesota Press, 2010), xviii.

[113] Spain, *How Women Saved the City*, 63.

[114] Wright, *Building the Dream*, 117.

[115] Lupkin, *Manhood Factories*, 7-9; Kathy Peiss, *Cheap Amusements: Working Women and Leisure in Turn-of-the-Century New York* (Philadelphia: Temple University Press, 1986), 166.

deserve a place in the architectural history of social reform. But while historians have begun to examine the built environments of both organizations,[116] these studies have so far neglected the wartime building projects of the YMCA and YWCA. This chapter fills in this gap, and furthermore shows that the experience of the two welfare agencies during World War I significantly impacted their postwar building programs. More specifically, the YMCA drew on its work with soldiers during the Great War to reshape the content and character of its work with young men in America's cities. Its wartime experience may also have speeded the standardization of the YMCA building program under its Building Bureau. The YWCA similarly designed its postwar urban buildings not according to its prewar standards, but according to the lessons learned in hostess-house work.

This chapter begins with an examination of the YMCA's hut-building program within the context of the organization's architectural history. It describes the YMCA's attempt to create a homelike space for soldiers within its rustic, serviceable camp buildings, primarily through decoration and the programming of activities within them. It then examines the impact of the cantonment program on the YMCA's postwar projects and on its administrational structure. The chapter then turns to the YWCA's hostess house program, situating it within the broader history of the design of spaces for women. It examines the architecture of the hostess houses, which were designed in popular domestic architectural styles but which also had ties to theories of social control and Taylorist planning methods. It finally considers the legacy of the hostess house program in postwar YWCA design.

[116] See especially Lupkin, *Manhood Factories*, and Spain, *How Women Saved the City*.

The Architecture of the YMCA Hut

The YMCA's stateside work with draftees during World War I closely paralleled the organization's work with young men in American cities during the prewar period.[117] In both cases, the YMCA served as a bridge between the homes the men had left and the alien environment in which they currently resided.[118] The organization's principal means of attracting members and residents was its recreational facilities; over the period between the Civil War and the turn of the twentieth century, the typical urban YMCA building had evolved to incorporate a gymnasium, swimming pool, locker rooms, and spaces for bowling and billiards.[119] In its bid to create a space for young men halfway between the middle-class suburbs and the boardinghouses and commercial amusements favored by working-class singles, the YMCA increasingly looked to contemporary apartment hotels as architectural examples.[120] Thus the YMCA of the nineteen-teens (see figure 2.1) was both explicitly domestic and explicitly masculine, a combination of the supposedly separate spheres of (female) home and (male) work.[121]

[117] The YMCA also had a history of Army work. The organization had been present in Civil War Camps with the U.S. Christian Commission; during the Spanish-American War, it operated 113 tents in American training camps. After the Spanish-American War, the YMCA established a department for Army/Navy work and built permanent recreational centers for soldiers and sailors in the U.S. and U.S. territories. *Hard at It* (Young Men's Christian Associations of North America, n.d.), pamphlet. Miscellaneous Red Triangle Materials, ca. 1918. Armed Services: World War I (Y.USA.4-1). Kautz Family YMCA Archives. University of Minnesota Libraries..

[118] Lupkin, *Manhood Factories* xviii.

[119] Ibid., 111-112.

[120] Ibid., 121-123.

[121] Lupkin xvii.

Figure 2.1: Lobby of Brooklyn YMCA (Built 1913-14). Published in Paula Lupkin, *Manhood Factories: YMCA Architecture and the Making of Modern Urban Culture* (Minneapolis: University of Minnesota Press, 2010).

The architecture of the YMCA's cantonment huts drew on the urban YMCA's definition of a home for young men. The YMCA huts, with their exposed beams and dirt floors, were nearly as rustic as the Army buildings surrounding them. But they also incorporated markers of middle-class domesticity, including a fireplace and a piano.[122] "Your building is the one 'Homey' influence within the Post, where the enlisted men may write their letter, enjoy their

[122] Contemporary middle-class housing—both single-family homes and apartments—typically also had fireplaces, though they were no longer used for heat. Wright, *Building the Dream*, 109, 145.

social chats and games, and sing around the piano, or sit by the cozy open fireplace and dream of home if they want to," Army chaplain Rideout wrote.[123]

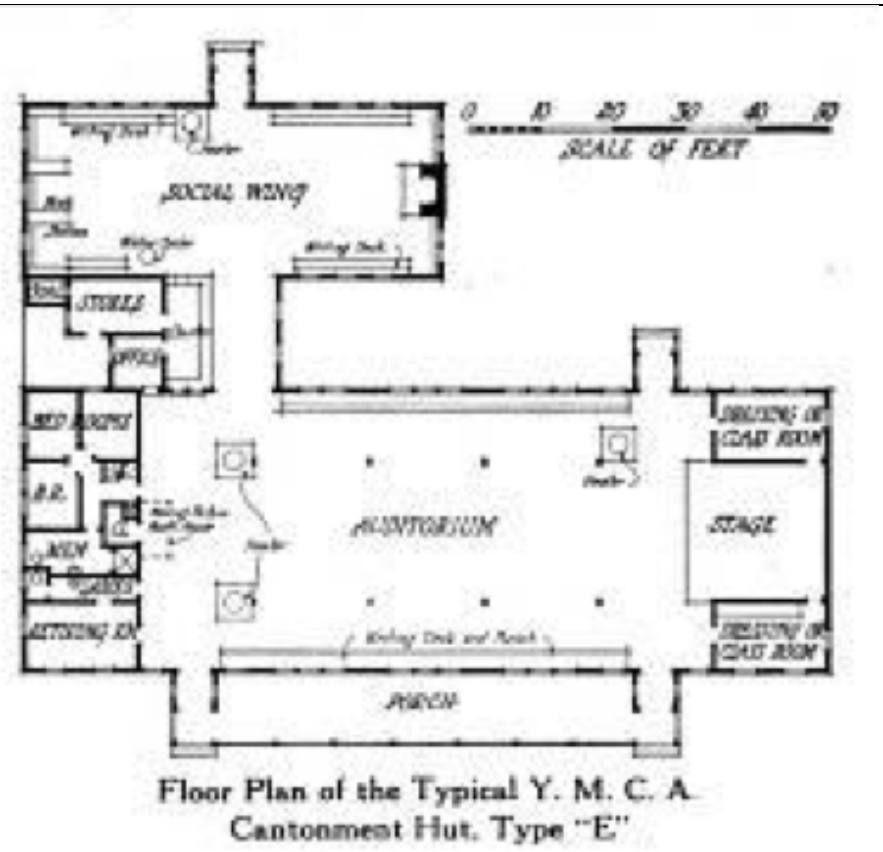
YMCA huts, one per regiment of soldiers, were built according to standardized plans developed by the wartime manifestation of the organization's new Building Bureau. New York architect Neil McMillan, Jr. oversaw the YMCA's training-camp building program. McMillan, born in Scotland in 1878, received a BS in architecture from the University of Illinois before holding various positions with the YMCA. In 1915 he was appointed head of the Building Bureau, at which time he commenced a planning study of the United States's existing YMCA buildings. After the war he transformed the Building Bureau from an advisory board into a comprehensive architectural service.[124]

The YMCA huts, like urban YMCAs before them, prioritized space for soldiers' recreation. The large "Type E" hut (see figure 2.2) consisted of an auditorium and social room laid parallel to one another and connected by an entry hall, in which the information desk was located. The smaller social room was furnished with writing desks around its edges, a fireplace and standing heater, bookracks, and a drinking fountain. The edges of the auditorium were occupied by more writing desks and bookracks; the center was filled with benches or chairs that could be moved to make room for indoor athletics. At either end of the stage and in the far corner of the auditorium opposite the entry hall were enclosed classrooms. Nearer the entry hall

[123] Rideout to Taylor, April 1, 1921.

[124] "2161. Neil McMillan, Jr.," in *The Alumni Record of the University of Illinois*, ed. James Herbert Kelley (University of Illinois, 1913), 330, http://books.google.com/books?id=PDNOAAAAMAAJ (accessed September 9, 2012); Charles C. May, "A Post-War Construction Program: The Building Bureau of the International Committee of the Y.M.C.A., Part I, " *Architectural Record* 45, no. 3 (March, 1919): 217-241, http://books.google.com/books?id=BnEXAQAAIAAJ (accessed September 9, 2012); Lupkin, *Manhood Factories,* 159-165.

opposite the stage were several secretaries' bedrooms, a store room, a lavatory, and a women's rest room. Behind the information desk was another storage room and a small office.[125]



Floor Plan of the Typical Y. M. C. A. Cantonment Hut, Type "E"

Figure 2.2: Plan of Type E YMCA Hut. Published in "Recreation Buildings for Officers and Men at the National Army Cantonments," *Architectural Forum* 29, no. 2 (August 1918): 48.

Also like urban YMCA buildings, the YMCA's training-camp buildings were designed for easy surveillance and control by a limited staff. Historian Paula Lupkin points to the influence on YMCA architecture of Jeremy Bentham's Panopticon, which was disseminated to

[125] Type E plan reproduced on p. 12 of *Manual of Camp Work* (The National War Work Council of the Young Mens Christian Association of the United States, n.d. [ca. 1918]), 5th edition. *Manual for Camp Work* (Editions 1, 2, 3, 4, & 5), National War Work Council, 1917-1918. Armed Services: World War I (Y.USA.4-1). Kautz Family YMCA Archives. University of Minnesota Libraries.; Plans for other types could not be found, but lists of hardware in the YMCA archives indicate other standard plans lettered F, G, and J. See folder National War Work Council--Bureau of Construction 1917-1918. Armed Services: World War I (Y.USA.4-1). Kautz Family YMCA Archives. University of Minnesota Libraries.

evangelical churchgoers through the popular Akron Plan for Sunday Schools. The Akron Plan arranged classrooms in a semicircle around a rotunda containing a raised platform for the school superintendent.[126] In the Type E YMCA hut, similarly, the YMCA secretary standing at the building's front counter had a clear view not just of the front door, but of the entirety of both the social room and auditorium wings, including the doors to the classrooms and the women's lavatory.[127]

The YMCA hut (see figure 2.3) was distinguished from the rest of the camp's built environment primarily by its decoration and by the activities taking place within it. The exterior of every hut was painted green, thus setting them apart from the unpainted military buildings and the buildings of the other in-camp welfare organizations, which had their own color schemes.[128] A YMCA hut's interior decorations were also important to its identity as a place apart from the rest of camp, as the organization recognized early. At a conference on YMCA huts held in May of 1917, Major Birks, who had done YMCA war work in Canada, England, and France, "emphasized the necessity of making the interior of the buildings as attractive as possible, and suggested the staining of the interior of the building, the use of bunting, and other inexpensive but attractive hangings for decorations."[129]

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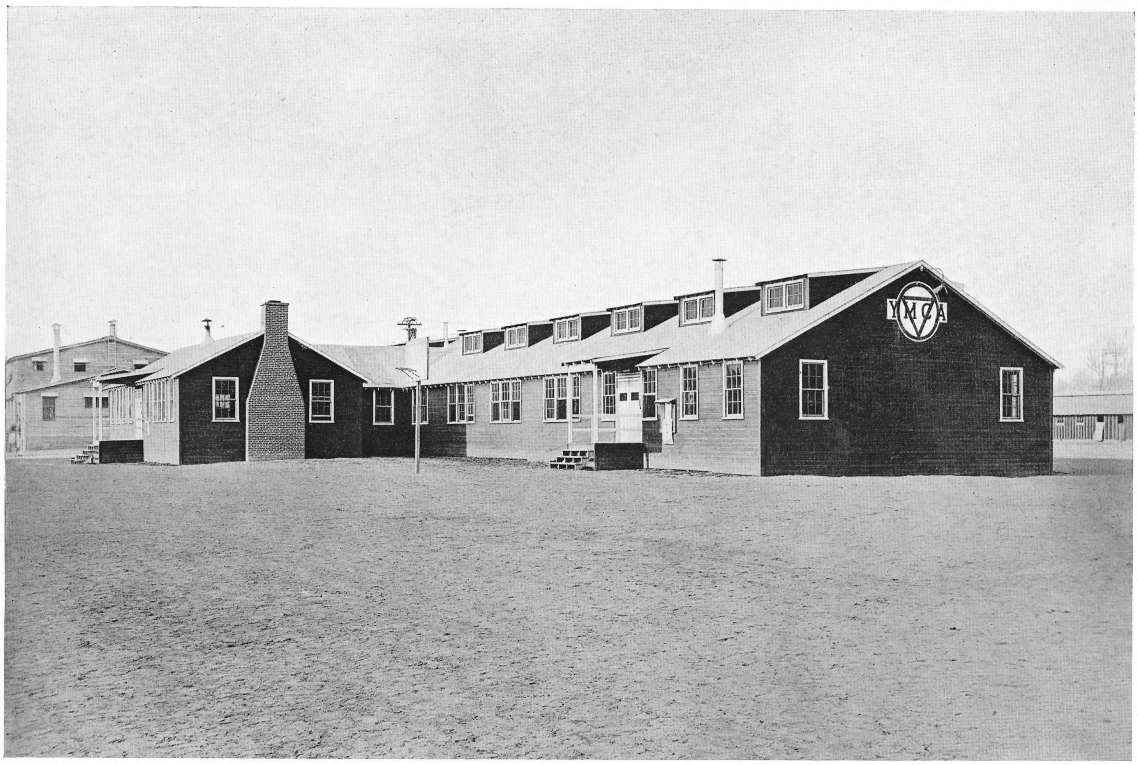
[126] Lupkin, *Manhood Factories*, 66-7; On the Akron Plan see, Marion Lawrance, *Housing the Sunday School, or A Practical Study of Sunday School Buildings* (Philadelphia: Westminster Press, 1911), http://books.google.com/books?id=MncKuo9dwakC (accessed September 9, 2012).

[127] See Type E plan in *Manual of Camp Work*, 5th edition, 12.

[128] *The Red Triangle at Camp Zachary Taylor, the Army YMCA*, pamphlet. Home Camps: St-Ta (end) 1918. Armed Services: World War I (Y.USA.4-1). Kautz Family YMCA Archives. University of Minnesota Libraries.

[129] "Notes on Conference on Association Huts Held at Atlantic City," May 12, 1917. National War Work Council--Bureau of Construction 1917-18. Armed Services: World War I (Y.USA.4-1). Kautz Family YMCA Archives. University of Minnesota Libraries.



Y. M. C. A. BUILDING. CAMP TAYLOR, LOUISVILLE, KENTUCKY
(Y. M. C. A. buildings are not built by the Government)

Figure 2.3: YMCA Hut at Camp Taylor. Published in *National Army Cantonments*.

The YMCA regimental huts were fitted out with standard equipment, including not just benches and writing desks, but also a graphophone and board games.[130] But according to the Manual of Camp Work, published in five editions over the course of the war, "Every building will have an individuality of its own. Its 'atmosphere' is created by the secretaries in charge."[131] Creating "atmosphere" meant, in part, applying decorative touches to the building's interior. Local churches helped with this aspect of hut design. At the Eagle Hut in Detroit, for instance,

[130] *Manual of Camp Work,* 1st edition (National War Work Council of the Young Men's Christian Associations of the United States, n.d. [ca. 1917]. *Manual for Camp Work* (Editions 1, 2, 3, 4, & 5), National War Work Council, 1917-1918. Armed Services: World War I (Y.USA.4-1). Kautz Family YMCA Archives. University of Minnesota Libraries.

[131] *Manual of Camp Work,* 1st edition. Repeated in subsequent editions.

> it was the business of the Secretaries to make it as homelike as possible and by the help of the ladies of the Fort Street Presbyterian Church and the Brewster Congregational Church, the windows were adorned with very beautiful curtains and old rose drapes; combined with these were two very fine baskets of ferns given by the young men of the Brewster Congregational Church.[132]

In addition, some women from the Woodward Avenue Baptist Church brought in a cookie jar, and for twenty-two weeks running the Eastern Star ladies filled it with sixty homemade cookies each Sunday. "[I]f you could see the boys go to that cookie jar as they did at home," an observer concluded, "you would feel sure it was well worth all the trouble to make them."[133]

Life in the YMCA Hut

More important to the soldiers than the hut's decorations were the activities they could participate in there. According to the *Summary of World War Work of the American YMCA*, published in 1920, the hut was "the aim and apex of the whole [YMCA] organization." "Everything was centered in the desire to make the Y camps both at home and abroad take the place of the American home, school, club, stage, and church," the authors of the Summary explained.[134] During the first year of the YMCA's involvement in war work, the organization spent $5,566,220.09 to construct and equip 720 buildings in the stateside training camps. It spent even more—$6,555,461.77—on the activities that took place within those buildings, providing stamps ($100,000 worth), writing paper (2 million sheets daily), and wrappings for parcels to be shipped home; reading materials (including 9.6 million pieces of religious literature), games, and songbooks (1,150,000); equipment and staff for games of baseball, basketball, football, soccer,

[132] "History of Detroit Camp." Army Camps—Miscellaneous ca. 1918. Armed Services: World War I (Y.USA.4-1). Kautz Family YMCA Archives. University of Minnesota Libraries.

[133] Ibid.

[134] *Summary of World War Work* (International Committee of the Young Men's Christian Association, 1920), 120, http://books.google.com/books?id=WeMMAAAAYAAJ.

volleyball, and boxing; educational programs, including classes in French, English, history and math, religious meetings and bible classes, and lectures on sexual hygiene; and concerts, vaudevilles, and motion picture exhibitions (1400 a week, for 1.2 million soldiers).[135]

The YMCA's religious orientation was on clear display at its in-camp huts—perhaps even more so than in its city buildings. In fact, YMCA secretaries identified spiritual longing as among the primary needs of soldiers away, often for the first time, from home. "For the first time in many a man's life, religion begins to take its place in the Army," wrote a contributor to Wisconsin State Work. "In his quiet hours the soldier thinks of home and of his parents and their hopes for him. It is at those periods that he seeks out the Y. M. C. A. Secretary or Camp Pastor of his denomination and talks over his problems frankly. It is easy and natural to talk religion in the army."[136] Soldiers could participate in both worship services and Bible studies at their

[135] National War Work Council of the Young Men's Christian Associations of the United States, "Financial Statement From April 26, 1917, to July 31, 1918." National War Work Council—Minutes and Documents. Armed Services: World War I (Y.USA.4-1). Kautz Family YMCA Archives. University of Minnesota Libraries. Number for activities calculated for total for Camp Operation and Other Activities, United States, with certain sums subtracted, for example: uniform, traveling expenses for secretaries; automobile costs; office supplies, etc., see schedule 2.

[136] *Wisconsin State Work* (State Young Men's Association) 29, no. 1 (March 1918). Home Camps: C ca. 1918. Armed Services: World War I (Y.USA.4-1). Kautz Family YMCA Archives. University of Minnesota Libraries.

regimental huts.[137] These gatherings were led not only by YMCA secretaries, but also by Army chaplains, camp pastors, and Christian laymen from the surrounding towns.[138]

Other YMCA hut activities had little to do with religion. The YMCA huts and auditoriums were best known as entertainment venues. Motion pictures, shown either inside or outdoors on portable screens, were especially popular. A veteran YMCA worker at Camp Lewis, for instance, calculated that 300 miles of distinct film were shown by the YMCA at his cantonment alone over the course of eighteen months; many of these movies were put on four or five times each.[139] In addition, the YMCA hosted traveling entertainers, and staged musical and theatrical shows featuring the soldiers themselves.[140]

Some of the activities orchestrated by the cantonment YMCAs were explicitly coordinated with military goals, while of a nature that nonetheless set them apart from military drill. Military authorities, the CTCA, and the YMCA all promoted athletics as a component of

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[137] Services for various dominations were held weekly on Sundays; on Sunday, June 23, 1918 at Camp Mills, for instance, the main Y.M.C.A. building hosted Catholic Confession at 6 a.m., followed by Catholic Mass at 8 a.m., Union Protestant Communion at 9 a.m., a Christian Science Service at 9:30 a.m., a morning (Protestant) service at 10:30 a.m., and an evening song service (also Protestant) at 7:30 p.m. The training camp's five YMCA tents, as well as the YMCA facilities in the detention camp, featured reduced schedules of additional services. Programs for Camp Mills religious services. Home Camps: Merritt, Mills, March, Pike, ca. 1918. Armed Services: World War I (Y.USA.4-1). Kautz Family YMCA Archives. University of Minnesota Libraries.; Program, "Welcome Service to New Men of the 1st Regiment, 159th Depot Brigade, Camp Zachary Taylor," July 1, 1918. Home Camps: St-Ta (end) 1918. Armed Services: World War I (Y.USA.4-1). Kautz Family YMCA Archives. University of Minnesota Libraries; During a September 1918 Bible study drive at Camp Lewis, for instance, 13,606 men attended over 250 classes, most of them meeting in the barracks. John Lyman Bogue, "America's Largest Cantonment, Camp Lewis." National War Work Council—Reports, 1918-1919. Armed Services: World War I (Y.USA.4-1). Kautz Family YMCA Archives. University of Minnesota Libraries.

[138] Programs for Camp Mills religious services; Program, "Welcome Service to New Men of the 1st Regiment, 159th Depot Brigade, Camp Zachary Taylor."

[139] Bogue, "America's Largest Cantonment."

[140] See, for example, "Souvenir Program, Ft. Thomas Military Minstrels," October 3, 1919. Home Camps: P Through T, Reports & Publications, ca. 1918. Armed Services: World War I (Y.USA.4-1). Kautz Family YMCA Archives. University of Minnesota Libraries; The YMCA's initial schedule of traveling entertainers was curtailed soon after in-camp work began, owing to budgetary constraints. Minutes of the Meeting of the Finance Committee of the War Work Council, November, 13 1917. Minutes—Meetings of the Finance Committee of the National War Work Council, May-Dec, 1917. Armed Services: World War I (Y.USA.4-1). Kautz Family YMCA Archives. University of Minnesota Libraries.

military training. The YMCA physical education program included calisthenics as well as a variety of organized sports, including pushball, wrestling, boxing, and the new sport of basketball. "A volley ball, basket ball or foot ball serve immediately to break up the monotony and strain of a military drill and makes their training a sport rather than a hardship," explained the notes to an illustrated lecture on YMCA war work.[141]

While it claimed a direct connection between athletics and other activities, including group singing,[142] and military efficiency, the YMCA touted its educational program on the basis of its contribution to civil life in the United States. The Army-as-university was a popular trope that helped rationalize the mass induction of male American youth in the service of fighting a European war. The soldiers of today "will unquestionably shape and control the destiny of the United States of America," George W. Perkins argued in a July 1918 speech on YMCA war work at the Bankers' Club in New York. "For when they return, whether a large percentage or a small percentage, they will unquestionably hold the political positions of this country, both small and great, for many years to come. They are not only, therefore, going to war, but are going to the greatest university that a body of men ever attended . . . ."[143] The YMCA took the idea of the

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[141] "Illustrated Lecture on the Army YMCA at Home and Abroad." Red Triangle Publications ca. 1918. Armed Services: World War I (Y.USA.4-1). Kautz Family YMCA Archives. University of Minnesota Libraries; Boxing was a special favorite of both recruits and their officers, as it seemed to bear the most direct relationship with soldiering. "Experience at the front has shown that knowledge of boxing is an important factor in the development of skill and aggression in bayonet fighting," explained a CTCA bulletin on the teaching of boxing. YMCA secretaries with experience boxing were thus engaged by the CTCA to teach hand-to-hand combat in the camps. But all athletics contributed to the end of creating a strong, unified Army, the same memorandum argued: The value of participation in athletic sports in the development of a sense of group loyalty and of an esprit de corps is generally recognized." War Department, "Bulletin No. 50," September 5, 1917. Negotiations between the YMCA and the Army/Navy 1917-1919. Armed Services: World War I (Y.USA.4-1). Kautz Family YMCA Archives. University of Minnesota Libraries.

[142] See, for example, Grace Humphrey, "Uncle Sam's Singing Army," *Everybody's Magazine* 38, no. 4 (April 1918): 88-90.

[143] "The Y.M.C.A. Hut is the Soldier's Library, Lecture Hall, University & Club . . . Extracts from the Remarks of Geo. W. Perkins at the Bankers' Club, New York," July 18, 1918. Miscellaneous Red Triangle Publications. Armed Services: World War I (Y.USA.4-1). Kautz Family YMCA Archives. University of Minnesota Libraries.

Army's intellectual influence one step further, offering within the Army training camps instruction in a range of subjects from basic reading and writing to advanced math and cartography.[144]

A final aspect of the YMCA hut's identity as the soldiers' home away from home was the way in which the organization's secretaries related to the enlisted men. The in-camp secretaries dressed and comported themselves as soldiers: the organization adopted a military-style uniform;[145] secretaries were advised to wear a "military style of hair-cut" and to refrain from using umbrellas or overshoes;[146] and the men working in the huts adopted military customs and language, calling, for example, the Bibles they distributed among the troops "khaki testaments."

But the YMCA secretaries were not to relate to the draftees as officers to enlisted men; rather, their organization encouraged them to demonstrate that the hut was a place in which seniority did not matter. The *Manual of Camp Work* suggested that secretaries work alongside the soldiers in cleaning and tidying the regimental huts. "A commissioned officer might lose caste with the men if he were to do manual work with them," the *Manual* explained, "but on the

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[144] The subject matter addressed by YMCA instructors was remarkably broad, especially considering the constraints on the soldiers' time posed by military training. The offerings at Camp Doniphan included classes in penmanship, French, Spanish, American history, the history of Western Europe, algebra, trigonometry, physics, physiology and hygiene, and economics. "Outline of the Army Y.M.C.A. Educational Work for Camp Doniphan, Ft. Sill, Okla.," Home Camps: Doniphan & Douglas, Reports & Publications ca. 1918. Armed Services: World War I (Y.USA.4-1). Kautz Family YMCA Archives. University of Minnesota Libraries; H. V. McChesney, *History of Army Y.M.C.A. Work at Camp Zachary Taylor* (Louisville, KY: 1920), 9. Home Camps: St-Ta (end) 1918. Armed Services: World War I (Y.USA.4-1). Kautz Family YMCA Archives. University of Minnesota Libraries; The YMCA's classes were numerous as well: the YMCA huts at Camp Lewis hosted 4792 classes in 21 months. Bogue, "America's Largest Cantonment," 22.

[145] The standard in-camp outfit comprised a "barracks cap" of "forestry green" cloth, with a black braid, black strap, black visor, black hat cord, and red YMCA insignia; an "English model" green blouse or jacket with red YMCA chevrons; a black necktie; riding breeches; leather leggins; and matching tan shoes. The secretaries were to wear "regulation U.S. model" overcoats in "forestry green" with YMCA chevrons, and were also permitted "a coat of military style and same color of uniform may be warn." "The Y. M. C. A. Uniform and How to Wear It." [Armed Services Work] Brief Historical Statement Concerning the National War Work Council Part 1 1919. Armed Services YMCA (Y.USA.4-4). Kautz Family YMCA Archives. University of Minnesota Libraries

[146] "The Y. M. C. A. Uniform and How to Wear It."

other hand it will give the secretary a better standing to show the men that he is willing to share their life and labors."[147]

The YMCA preferred that soldiers think of the hut secretaries not as officers, but as surrogate fathers. Camp workers were to provide the emotional and spiritual support, not to mention moral guidance, lacking in the barracks and on the drill fields. The organization published a poem entitled, "Where a Fellow Finds a Dad" that read in part:

> But the Camp life is not home life
> Nor the days like what you had,
> And there often comes the feeling
> That you'd like to talk to Dad.
> Soon you see the Y Huts open
> On the job from morn 'til night,
> With a husky bunch of workers
> And the stuff that steers you right.
> They are quick to tell a fellow
> What is good from what is bad,
> And you feel when they're around you
> That in Camp you've got a Dad.[148]

The Architecture of the YWCA Hostess House

Like the YMCA's cantonment hut program, the YWCA's in-camp work was grounded in the organization's prewar experience in cities across the United States. Since 1860, the YWCA had located or provided safe housing for working women; helped women locate employment; and offered supervised recreational opportunities to women and girls.[149] As such, the organization straddled the feminisms of the nineteenth centuries: while the upper- and middle-class women leaders of the YWCA framed their work as an expansion of the domestic sphere,

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[147] *Manual of Camp Work,* 1st edition, 18.

[148] "Where a Fellow Finds a Dad." Miscellaneous Red Triangle Publications ca. 1918. Armed Services: World War I (Y.USA.4-1). Kautz Family YMCA Archives. University of Minnesota Libraries.

[149] Spain, *How Women Saved the City*, 89-91.

they actively supported employment and financial independence for the working-class women they served.[150]

Even more than the YMCA, the YWCA of the Progressive Era defined itself as a home away from home for "women adrift" in America's cities. The domestic imagery and language of the YWCA—women supervisors were "matrons"—protected its female sponsors from accusations that they were overstepping their traditional roles as household moral guardians. At the same time, the equation between the urban YWCA and the suburban home served a conservative purpose, insulating young women members from the potentially subversive influence of boarding-houses, nickelodeons, and dance halls.

The training-camp incarnation of the YWCA, the hostess house, was likewise meant to protect its visitors from the surrounding environment: in this case, the Army cantonment. The YWCA was a late arrival on the camp-welfare scene. Its hostess houses served as supervised, delimited spaces in which soldiers could meet women family and friends, whose arrival en masse to the training camps had not been anticipated by military officials.[151]

Like the YMCA huts, the YWCA hostess houses bore only a superficial relationship, architecturally, to urban YWCA buildings. The latter tended to be imposing multi-story structures in the Colonial Revival or Renaissance styles. More importantly, up until World War I, most city YWCAs retained a Victorian arrangement of interior spaces, with each activity relegated to its own room, and with public and private areas strictly separated (see figure 2.4).

[150] For more on separate spheres, see Wright, *Building the Dream*, 108-9.

[151] Young Women's Christian Association of the USA, War Work Council, *Report of Hostess House Committee* (New York : War Work Council, National Board of the Young Women's Christian Associations, n.d. [ca. 1920]).

(The YMCA, in contrast, had begun to experiment with a more open, flexible plan at least by 1912-1913, when its Brooklyn building went up; see figure 2.1.)[152]

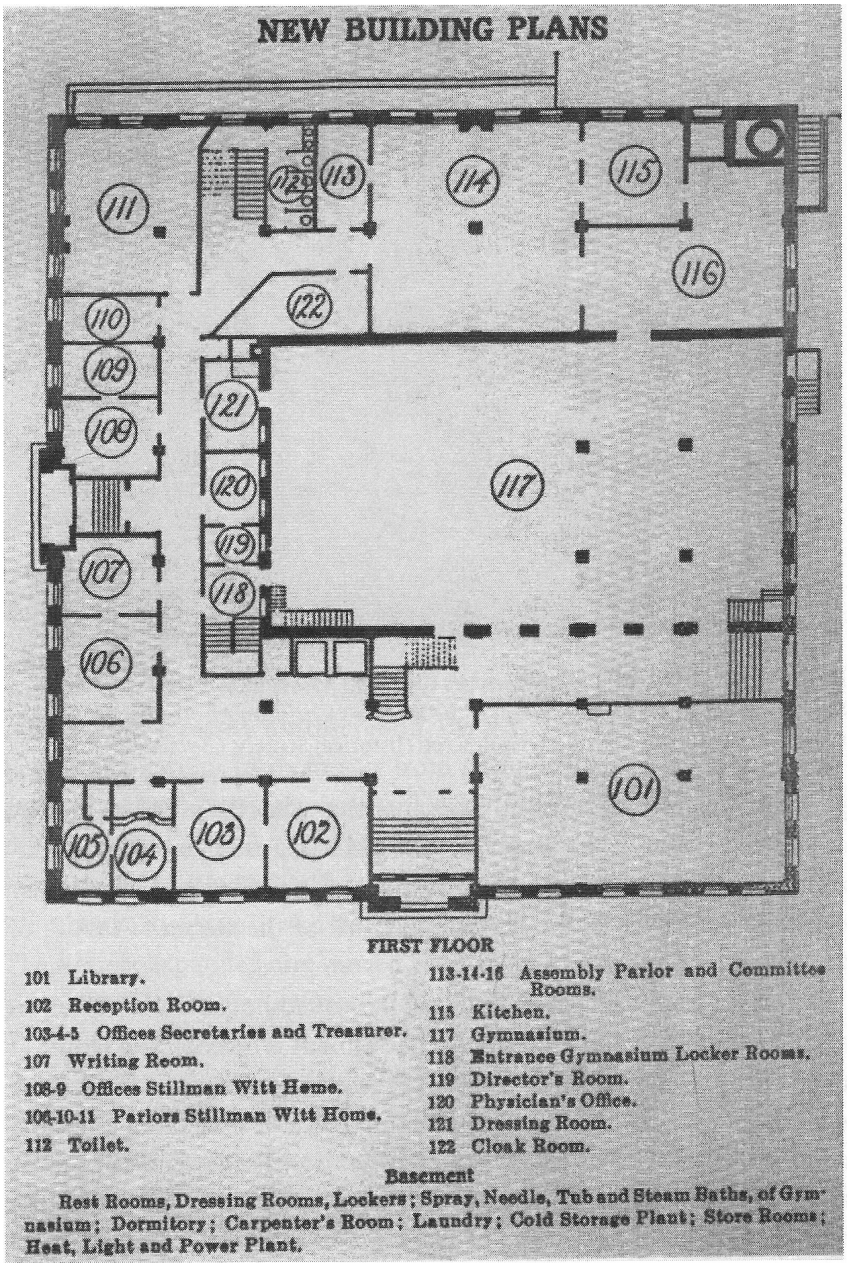

Figure 2.4: Plan of First Floor, Cleveland YWCA Headquarters Building (Built 1908). Published in Daphne Spain, *How Women Saved the City* (Minneapolis: University of Minnesota Press, 2001).

[152] Lupkin 122-131.

Instead, other types of spaces—specifically, spaces designed for women—seem to have informed the hostess houses' design. The Arts and Crafts movement, and in particular the private homes designed in the Arts and Crafts style by hostess house architect Julia Morgan before the war, shaped the interiors of many hostess houses. With its rejection of the Victorian segmentation of living spaces, its emphasis on the use of local materials, and its deployment of structural features as decoration, the Arts and Crafts style was a natural fit for a building program that proposed using the same space for multiple purposes, relied heavily on wood, and allowed little extra time or money for superficial decoration. But the application of the Arts and Crafts style to hostess house interiors may have been more than a practical choice; it may also have been a statement about the shifting definitions of femininity and domesticity under the new social, political, and economic conditions of the twentieth century.[153]

Morgan adhered to no single style as the perfect solution to every architectural problem,[154] with the result that she has been criticized for her stylistic eclecticism and for being overly beholden to her clients' tastes. She nevertheless worked consistently in the Arts and Crafts style in her many domestic designs prior to World War I. Karen Ann McNeill, in her dissertation on Morgan, makes a compelling argument about the possible feministic import of

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[153] Julia Morgan, born in San Francisco in 1872, became the first woman to graduate from the University of California at Berkeley with a degree in civil engineering. Shortly thereafter she traveled to Paris and, thanks to the legacy of another hostess house architect, Fay Kellogg, was admitted in 1898 as the first female student to the architecture section of the École des Beaux-Arts. She received her Certificat at the age of thirty and returned to northern California to establish an architectural practice. Her office in the San Francisco Merchants' Building burned in the 1906 earthquake, but her two recently-completed designs for Mills College survived, and Morgan's career swooped upward when she was awarded a contract to reconstruct the badly-damaged Fairmont Hotel. From before she traveled to Paris and throughout her career, Morgan received professional advice and support from Bernard Maybeck, an architect and Berkeley professor known for his Arts and Crafts, Mission Style, and Gothic Revival designs. Cary James, *Julia Morgan* (New York: Chelsea House Publishers, 1990), 15-18, 23.; Maybeck's support of Morgan is a recurring theme in Karen Ann McNeill, "Building the California Women's Movement: Architecture, Space, and Gender in the Life and Work of Julia Morgan" (PhD dissertation, University of California, Berkeley, 2006). See, for example, 48-9.

[154] McNeill, "Building the California Women's Movement," 161.

Arts and Crafts design to both Morgan and her clients. Though the Arts and Crafts movement has been explained as either a wholesale rejection of industrial culture or, contrarily, as an embrace of simplicity within the context of the scientific housekeeping movement, McNeill offers a third interpretation.[155] In breaking down the literal privacy walls of the Victorian era, Morgan and her clients both made a statement about the primacy of community, and confused the boundary between the private and public spheres.[156] The latter is particularly important within the context of the YWCA program, which crafted new social roles for both the middle- and upper-class sponsors of YWCA work and the working-class women they served.

Besides hundreds of private homes, Morgan also designed close to 90 buildings for women and women's organizations including the YWCA.[157] Two of Morgan's pre-World War I projects in particular seem to have shaped the architecture of the hostess house program: her work at Asilomar, a YWCA retreat center, beginning in 1913; and her design of the interior of the YWCA building at the Panama-Pacific International Exposition (PPIE) in 1915.

Both Morgan's Asilomar buildings and her interior for the YWCA PPIE building were in the Arts and Crafts mode, and thus are quite different from another of her prewar designs for the organization, the Oakland YWCA building (1914). In preparation for her work on the Oakland building, the first city YWCA she designed, Morgan toured many existing East Coast YWCAs.[158] This may explain her choice of an Italian Renaissance style for the Oakland

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[155] Per McNeill, Lears reads the Arts and Crafts movement as a pushback against industrial capitalism; Wright ties the style to Progressive-Era concerns with standardization and sanitation. McNeill, "Building the California Women's Movement," 174-5.

[156] McNeill, "Building the California Women's Movement," 176.

[157] McNeill, "Building the California Women's Movement," 124.

[158] Sharon D. Kasser, "Challenges and Successes in a Hostile Environment: Julia Morgan, Architect" (master's thesis, San Jose State University, 2004), 32.

structure. In contrast to the intimacy of her open-plan Arts and Crafts houses, the two-story courtyard of the Oakland YWCA (see figure 2.5), a near-replica of Donato Bramante's cloister at Santa Maria della Pace in Rome, is imposing, the fireplace and accompanying inglenooks the only evidence of the courtyard's intended use as a social space.

Figure 2.5: Julia Morgan, Courtyard of Oakland YWCA Building (Built 1914). Nomination Form and Accompanying Photographs Available for download through the National Park Service's National Register of Historic Places, http://pdfhost.focus.nps.gov/docs/NRHP/Photos/84000755.pdf**.**

Like the courtyard at the Oakland YWCA, the administration building at Asilomar (1913; now the Phoebe Apperson Hearst Social Hall) is a large open space with a single fireplace, but there the similarities end. The exposed triangular trusses and warm red wood of the administration building make the space feel smaller than it is. In contrast to the Oakland building, which showcased Morgan's Beaux-Arts credentials, the administration building and later structures were designed to blend into the site's spectacular natural setting. As for Morgan's cantonment hostess houses, the choice of the Arts and Crafts style for the buildings at Asilomar may have been about finding the right architectural aesthetic to fit the program at hand, narrowly construed; but it also might have been a broader statement about the erasure of boundaries not just between inside and outside, but between the women of the YWCA and the world outside their domestic enclosures.

Morgan designed a second Arts-and-Crafts space for the YWCA before the war, this the interior of the organization's building at the 1915 PPIE in San Francisco. In a series of events that would be echoed in the Great War training camps, the fair's all-male architectural board had at first made no special provision for female visitors, but responded to complaints by asking the YWCA to sponsor a women's hospitality center. Edouard F. Champney, the fair's supervising architect, took over the design of the building's exterior; Morgan was given control of the interior.[159] Champney's and Morgan's work contrast sharply: Champney's Italian Renaissance exterior is highly ornamented, with pairs of caryatids circling the building, while Morgan's Arts and Crafts interior is equally restrained. In this case the relative simplicity of the Arts and Crafts style underscores the YWCA's decision to provide functional amenities within the building,

[159] Sarah Holmes Boutelle, *Julia Morgan, Architect* (New York: Abbeville Press, 1995), revised edition, 101-105.

including a cafeteria and childcare, rather than to display women's artwork as at previous world's fairs.[160]

The interiors of most hostess houses, including not just those designed by Morgan but also the many buildings designed by Katharine Cotheal Budd, picked up on the Arts and Crafts theme developed by Morgan at Asilomar and the PPIE, as well as in her residential designs. Photographs of the hostess houses' multipurpose living rooms show visitors gathered around large stone fireplaces or seated in chairs around the perimeter of the two-story space. As at Asilomar and the PPIE, the entrance hall at Camp Mills (Budd; see figure 2.6), for instance, is at once open and intimate, the wood floors and trusses, the mezzanine balconies, and the paned windows reducing the sense of scale without functionally dividing the space. In Camp Mills's dining room, similarly, triangular trusses lower the ceiling, and a brick fireplace forms the focal point of the many individual tables.

[160] Mary Pepchinski, "Woman's Buildings at European and American World's Fairs, 1893-1939," in *Gendering the Fair: Histories of Women and Gender at World's Fairs*, ed. T.J. Boisseau and Abigail M. Markwyn (Urbana: University of Illinois Press, 2010), 193; See, for example, Sophia Hayden's Women's Building at the World's Columbian Exposition, a typical exhibition hall.

Figure 2.6: Katharine Cotheal Budd, Entrance Hall, YWCA Hostess House, Camp Mills. Published in "The Hostess House in the Army Cantonment," *Architecture* 38 (1918).

The hostess houses' exteriors were explicitly domestic—much more so than the exteriors of the YMCA huts. The women architects involved in the YWCA program consciously manipulated features common to American domestic architecture to identify their hostess houses as visitors'—and soldiers'—homes away from home. In contrast to the more purely functional architecture of the military barracks and the unfinished YMCA huts, camp hostess houses were distinguished by porches, fireplaces, many-gabled roofs, dormer windows, and references to common residential styles (including the bungalow style, the Tudor Revival and West-Coast board-and-batten construction). The architects of the YWCA's hostess houses emphasized the residential character of their designs, even as they simultaneously celebrated the many-faceted work taking place inside them.

We know the least about the houses designed by Fay Kellogg.[161] The single *War Work Bulletin* article dedicated to her work described all seven of her southeastern hostess houses[162] as being similar in construction—"a bungalow type, with long sloping green or gray roof and the house cream colored with green trimmings." The houses had an entrance hall, living room, kitchen, cafeteria, and rest room on the first floor, and emergency bedrooms on the second floor.[163]

A small exterior photograph of Kellogg's Camp Gordon hostess house published in the *War Work Bulletin* (see figure 2.7) gives us some idea of what these buildings looked like. The house is broad and rectangular, with a wide first story topped by a much smaller, square second story. Both stories have flat or barely pitched roofs. The entire front facade of the first story is

[161] Kellogg worked for the Hostess House Committee from at least the fall of 1917 until her resignation, due to ill health, in May of 1918. Born in Brooklyn in 1871, Kellogg began studying architectural drawing after her father dissuaded her from a career as a physician. After college in Washington, D.C., then a year at the Pratt Institute, she moved from a job in New York to an atelier in Paris, where she was instrumental in gaining women's entry to the prestigious École des Beaux-Arts. By 1907 she was back in New York as the American News Company's company architect. Kellogg insisted that "[w]omen desiring to enter the profession should take up domestic architecture" because of their status as "chief occupants and governing spirits" of their own homes. But she herself was in charge of or assisted in the design of a variety of building types, including a monastery, an armory, and New York's Hall of Records. "[I]t was always my ambition to be able to build a nice little house which I could call my own, and I am proud to say that this and a lot more has been realized," she reflected in 1907. Kellogg died in July 1918.; Meeting minutes, April 24, 1918. World War I, War Work Council, Hostess House Committee: Minutes, 1917-18. YWCA of the U.S.A. Records, Sophia Smith Collection, Smith College, Northampton, Mass.; Meeting minutes, May 29, 1918. World War I, War Work Council, Hostess House Committee: Minutes, 1917-18. YWCA of the U.S.A. Records, Sophia Smith Collection, Smith College, Northampton, Mass.; Fall 1917 date from "Chronological List – Opening of Hostess Houses and Closing Dates." World War I, Hostess Houses, Miscellaneous, Lists, 1919. YWCA of the U.S.A. Records, Sophia Smith Collection, Smith College, Northampton, Mass.; "Miss Fay Kellogg, Architect, Dies," *New York Times,* July 12, 1918; "Woman Invades Field of Modern Architecture," *New York Times*, November 17, 1907; Kellogg's support for the cause of woman suffrage is indicated by her attendance as part of a "delegation of self- supported women" at English suffragette Sylvia Parkhurst's 25 October 1909 Carnegie Hall appearance. "Great Throng Hears Mrs. Parkhurst," *New York Times*, October 26, 1909.

[162] Meeting minutes, April 10, 1918. World War I, War Work Council, Hostess House Committee: Minutes, 1917-18. YWCA of the U.S.A. Records, Sophi;a Smith Collection, Smith College, Northampton, Mass.; These included at least one house each at Camp Gordon, Fort Oglethorpe, Camp Zachary Taylor, and Camp Lee. She seems also to have been involved, according to Hostess House Committee notes, with the design of hostess houses for nonwhite visitors at Camps Gordon and Jackson.

[163] "South Atlantic Field Hostess Houses," *War Work Bulletin* (YWCA War Work Council), no. 14 (January 11, 1918): 2.

covered by a porch, its roof supported by widely spaced columns. A low railing runs across the bottom of the porch. The side of the first story and front of the second story feature a row of rectangular windows. The one visible side of the second story has no windows. Kellogg's hostess house at Camp Zachary Taylor (see figure 2.8) was similar, except that the porch extended along at least two sides. The square second story of the house also has (square) windows along both of the visible sides.[164]

Figure 2.7: Fay Kellogg, YWCA Hostess House, Camp Gordon. Published in *War Work Bulletin* (YWCA), no. 14 (January 11, 1918).

[164] "South Atlantic Field Hostess Houses," *War Work Bulletin*, no. 14 (January 11, 1918): 2; Postcard in author's collection.

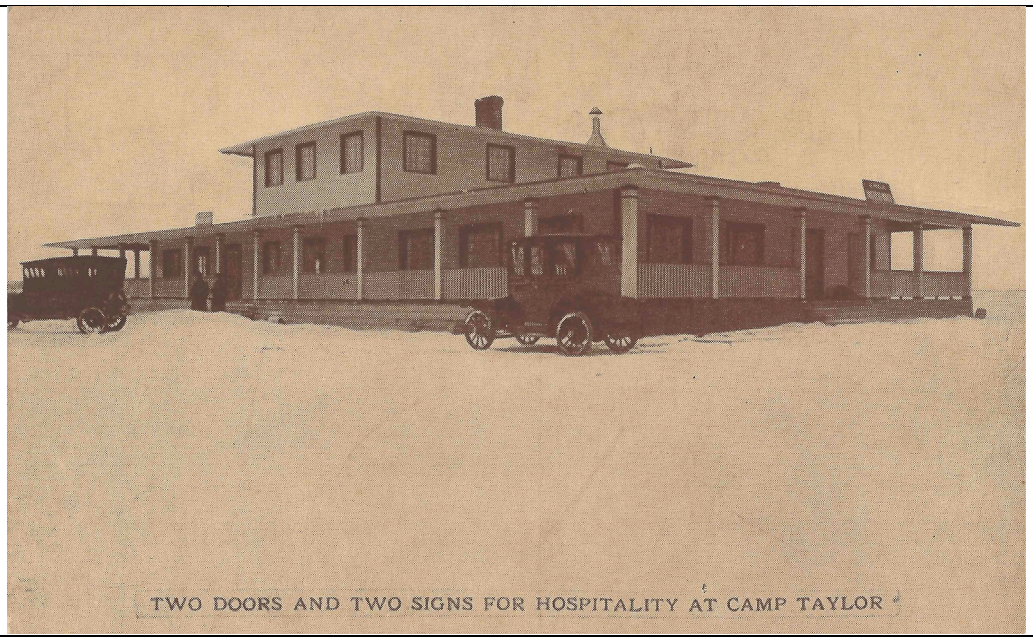

Figure 2.8: Fay Kellogg, YWCA Hostess House, Camp Taylor. Postcard in Author's Collection.

Katharine Cotheal Budd's[165] numerous[166] hostess house designs are comparatively well-documented, thanks primarily to two articles published in the contemporary architectural press. In "Bringing Home to the Army Camps," Estelle Frances Ward described the evolution over time of Budd's hostess house architecture. Her earliest houses were of what Ward called the "God's Providence type," after the 1652 God's Providence House in Chester, Cheshire,

[165] Budd began her career as a painting student in William Merritt Chase's summer program in Shinnecock Hills, New York. She also became involved in the Art Student's League of New York (founded 1875), for which Chase was the chief instructor. Budd then took an architecture class at the Museum of Modern Art in New York and, after winning the end-of-term award, entered the architectural office of her professor, Grenville Snelling. She followed six years with Snelling by a tenure in Paris, where she worked in the same atelier (that of Marcel de Monclos) as had Kellogg. Upon her return to New York, Budd worked for the architect Grosvenor Atterbury (another of Chase's students) before founding her own firm. Budd's papers, housed at the American Institute of Architects Archives (Washington, D.C.) are not yet open to researchers. I have obtained photocopies of approximately 100 documents from Victoria Budd Opperman, who donated the collection (cited hereafter as VBO Collection).; Victoria Budd Opperman, "Katharine Cotheal Budd (1860-1951): One of America's Early Women Architects" (Division III paper, Hampshire College,1983), 1-8.

[166] The most prolific of the three women architects hired by the War Work Council, Budd designed over fifty hostess houses on at least sixteen different plans, and altered twenty-three existing buildings for hostess house use. "Hostess Houses Under Direction of Katharine Cotheal Budd," 1-2, VBO Collection.

England.[167] The very first of these, and the first hostess house authored by Budd, was at the Great Lakes Naval Station.

Though it is hard to tell from the two extant photographs, the hostess house at the Great Lakes Naval Training Station appears to be T-shaped in plan, with a square porch nestled between the two bars of the T on either side. The arched entry, which is situated between the gable-end of the T's crossbar and the porch to the left, has a small gabled roof over it. The stuccoed gable-end to the right of the entrance is topped with a cross-shaped finial. As Ward's description indicates, the emphasis in the Great Lakes Naval Training Station hostess house is on the horizontal rather than the vertical; this sets it apart from her later designs, as well as from the original God's Providence House, a multi-story row house.

The second of Budd's hostess house types, according to Ward, "looks like a many-gabled mansion, but if Miss Budd tells you its secret, you will see that it is really nothing but an American barn with a porch at each side where the farmer would build a lean-to; that the roof is disguised with dormers and broad windows flooding the rooms with sunlight and air."[168] Ward's description of this type of house as resembling both a mansion and a barn is puzzling, until we remember the premium she—along with Budd, the Hostess House Committee, and Army architects and planners—put on the identity of Army camp architecture as particularly

[167] Estelle Frances Ward, "Bringing Home to the Army Camps" *House Beautiful* 45 (February 1919): 76. According to Ward, in the Great Lakes hostess house and its successor, Budd "flattened the gables but retained the wide bay boards and something of the feeling in the stucco work."; The Great Lakes hostess house, and those that followed it, including the YWCA building at Camp Dodge, were modeled on God's Providence House at 9 Watergate Street and 11-11A Watergate Row, Chester, Cheshire England. Built in 1652, the four-story Tudor-style row house was constructed of sandstone and timber framing with plaster panels and a slate roof. The first and second floors comprise storefronts, the latter part of the "Chester rows," a second-story covered walkway found on each of the city's four main streets. The third-story facade centers around a casement window, itself surrounded by plaster panels decorated with naturalistic motifs. The fourth, attic story, has a row of quatrefoil braces across its its base, and a smaller window at its center. Between the second and third stories is a freeze engraved with the words: "GOD'S PROVIDENCE IS MINE INHERITANCE." This motto is said to come of the household's escape (in a previous structure, dating to the 13th century) from the 1647-48 plague.

[168] Ward, "Bringing Home to the Army Camps," 77.

"American." For Ward, it seems, a Fifth-Avenue mansion was nothing more than a trussed-up version of that agricultural archetype, the Mid-Atlantic barn. Ward claimed that Budd developed the barn hostess house design in order to reduce costs; as this form was familiar to builders, they were able to construct it for less money than a more experimental architecture might require.[169]

Budd's barn-inspired hostess houses varied significantly in complexity. One of her simpler designs, plan 16, was implemented at Camps Grant (house #1), Sherman (nonwhite house), Dodge (house #2), and Morrison, and was revised for Camp Lee (nonwhite house), Camp Meade (nonwhite house), Camp Alexander (nonwhite house), Camp Beauregard (nonwhite house), Raritan Arsenal, Camp Shelby, Camp Sheridan, Fort Sill, and Camp Taylor (house #2). A drawing of Camp Grant hostess house #1 (see figure 2.9) and a photograph of the nonwhite hostess house at Camp Sherman both show buildings roughly square in plan, with a central space covered by a pitched roof and lean-to screened porches to either side. A third screened porch projecting from the front of the house frames the entrance. Across the gable directly above the front porch is a row of three windows; the space above the windows is decorated with half-timbering and a hexagonal YWCA plaque. A shed dormer and chimney project up from one side of the roof.[170]

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[169] Ibid., 77, 100.

[170] The hostess houses at Camps Dix (house #1) and Devens are also related to Budd's barn type, though we do not know whether she or another architect designed them. These hostess houses have an I-shaped plan, with the center segment one-and-a- half stories high and both end segments two stories high. Each of the Camp Dix house's two entrances are at the center of a lean-to porch, one attached to the center section of the building and one to an end section. A gable shaped projection above each door frames a YWCA sign. The Camp Devens house has a central lean-to porch but appears to have only one entrance, at the center of an end section lean-to porch. The Camp Dodge hostess house #1, also unattributed to a particular architect, is similar in plan, but has only one lean-to porch, attached to the center segment of the building, and thus only one entrance. Drawing of Camp Dodge hostess house #1 in "Various Views of the Seventy Hostess Houses," in "About Hostess Houses," special issue, *War Work Bulletin*, no. 18 (February 5, 1918): 2.

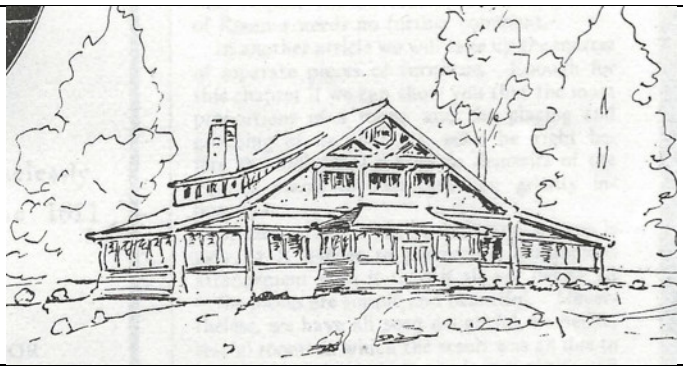

Figure 2.9: Katharine Cotheal Budd, YWCA Hostess House, Camp Grant. Published in Estelle Frances Ward, "Bringing Home to the Army Camps," *House Beautiful* 45 (February 1919).

Budd's most celebrated hostess houses, at the embarkation Camps Merritt and Mills (plan 17) are particularly complex versions of her barn type. The author of an unsigned article in *Architecture* (1918), possibly Budd herself, described the houses in words similar to Ward's: "The roof line of these hostess houses is taken from that of the fine old barns of Pennsylvania and New Jersey. The outline is simple and direct, a gable with lean-to extensions; thousands may be seen by any traveler." And like Ward's article, the piece in *Architecture* claimed, "This truly American type of architecture is suitable for a building that must be large but inexpensive."[171] But while the design for the hostess houses at Camps Mills and Merritt were steeped in American architectural history, they were also innovative, the article's author claimed. "A thorough knowledge of the hundreds of details that make for success in a hostess house is necessary before a successful plan can be drawn, she wrote. "The result as here shown is interesting: the architect evolved an entirely new plan of the 'cross' variety, with a wing devoted to each branch of hostess-house work" (see figure 2.10).

[171] "The Hostess House in the Army Cantonment: Katharine Cotheal Budd, Architect," *Architecture* 38 (1918): 268.

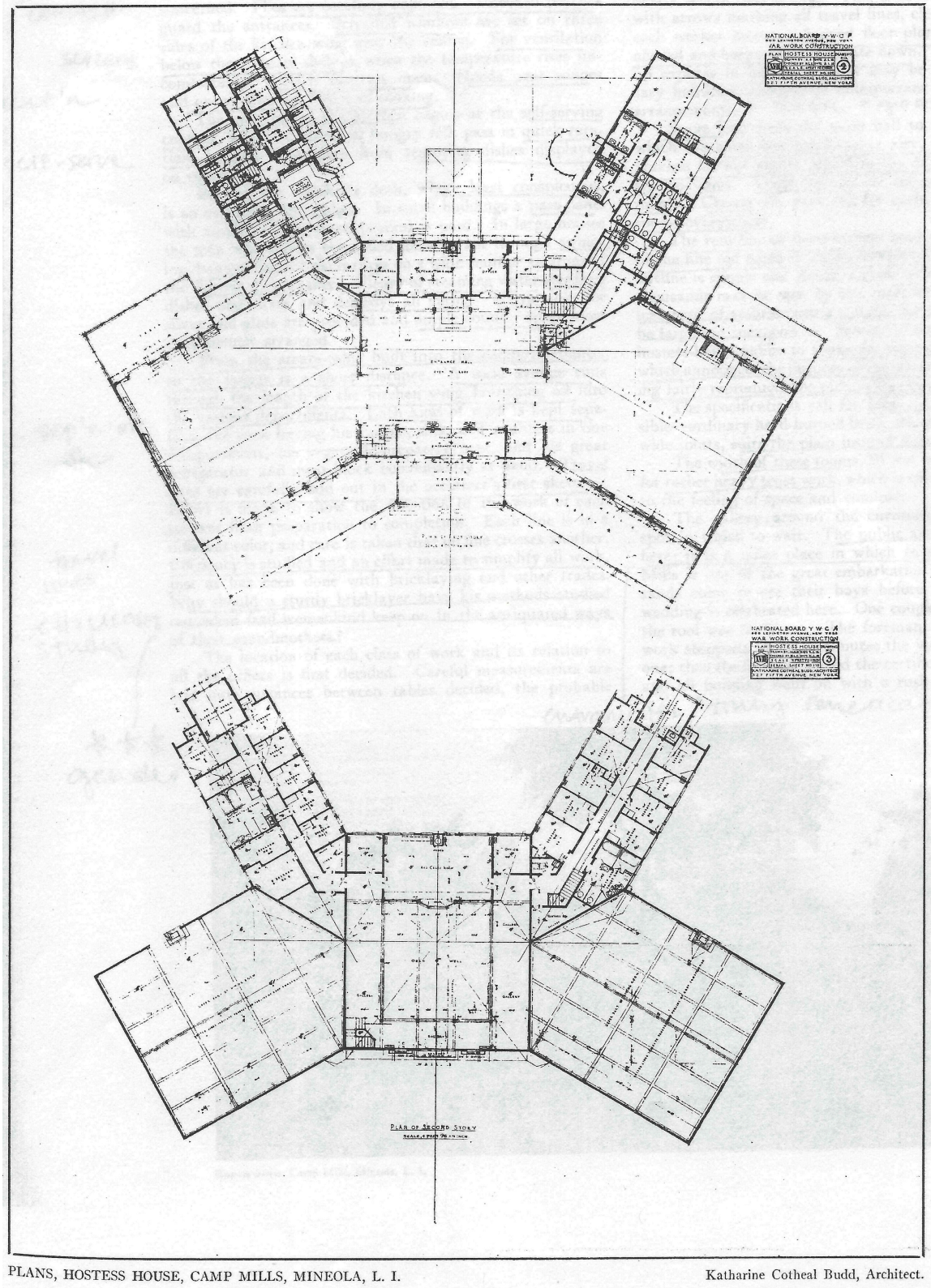

Figure 2.10: Katharine Cotheal Budd, Plans, YWCA Hostess House, Camp Mills. Published in "The Hostess House in the Army Cantonment."

A visitor entered the hostess houses at Camps Mills and Merritt through a set of heavy doors set in the gable-end of a rectangular central hall. Projecting out from either side of the hall at sixty-degree angles were two gabled structures, each having a lean-to porch to front and back. Thirty degrees from each of these, to the back of the house, were two narrower structures housing the private rooms of the house—the bathrooms, changing rooms, nursery, emergency room, and hostesses' sleeping quarters. The hostess house's public spaces were double-height, the entry hall having a second-story balcony; the private wings had rooms on both stories. Budd's interest in Tudor Revival architecture manifested itself spectacularly in the exterior decoration of each of these houses (see figure 2.11). The entry to each house is surrounded by half-timbering and a balconet. A horizontal "Hostess House" sign above the latter echoes the motto inscribed above the door of God's Providence House.

Figure 2.11: Katharine Cotheal Budd, Exterior View, Hostess House, Camp Mills. Published in "The Hostess House in the Army Cantonment."

Budd's hostess house plan 17 and the similar plan 21[172] recall the summer cottage she built in 1896 for Georgina and Abby Howland at Southampton, Long Island (see figure 2.12). Budd had become friends with the Misses Howland when they studied together at William Merritt Chase's Shinnecock Hills summer school. The shingle-style house she designed for the sisters nestled around a hilltop, its two wings projecting diagonally back from a porch entrance and triangular central hall. The structure is flattened by a low, curving roof, its second story camouflaged as a partial story by dormer windows.[173] The plan for the Southampton house may have been born of topographic necessity. But Budd carried the diagonal-wing concept, which also allowed for greater exposure throughout of light and air, as well as a neat separation of functions among and along each of the wings, to the varied sites of at least eleven hostess houses.[174]

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[172] "Hostess Houses Under Direction of Katharine Cotheal Budd," VBO Collection. Budd assigned a plan similar to that used at Camps Mills and Merritt, number 21, in either standard or revised form to a number of other hostess houses: Camp Grant #2, Camp Custer, Quantico Naval Base, Camp Humphreys, Camp Taylor (white house), the Naval Training Station at Newport, Camp Knox, Camp Wadsworth, and Camp Pike. Like the plan-17 houses, the hostess houses built according to plan 21 had four wings projecting from a central, rectangular hallway. A second-floor plan of plan 21 in the VBO collection shows the addition of a small rectangular porch over the entrance, and sleeping porches to the inside of the end of each narrower wing.; A photograph of the hostess house at the Naval Training Station in Newport, Rhode Island, which was built according to a revision of plan 21, shows a smaller and simpler version of the houses at Mills and Merritt, with a less-ornamented entryway and wings only one-and-a-half stories in height. War Work Council, *Report of Hostess House Committee*, 20.; See also a postcard of the Camp Custer hostess house at Willard Digital Collections, "Camp Custer Hostess House, c. 1918," *Willard Library*, http://dspace.willard.lib.mi.us/xmlui/handle/123456789/10523 (accessed September 11, 2012).

[173] Joy Kestenbaum, "Katherine [sic] Budd, 1860-1951," in *Long Island Country Houses and their Architects,* ed. Robert B. MacKay, Anthony K. Baker, and Carol A. Traynor, (New York: W. W. Norton & Company, 1997): 86-87. Budd designed another, larger diagonal-wing house on Long Island, "Sunwood" for Frank Melville (1919). Kestenbaum suggests that Melville commissioned Budd after being impressed with her attention to the topography of the Howland estate site.

[174] Interestingly, Morgan designed a house with a similar plan for Oma and Ralph Eltse. As in Budd's diagonal-plan hostess houses, at the Eltse house the living room and dining room form separate wings connected by an entrance hall, allowing for some functional separation within a relatively open plan. See figure 46 in McNeill, "Building the California Women's Movement," 314.

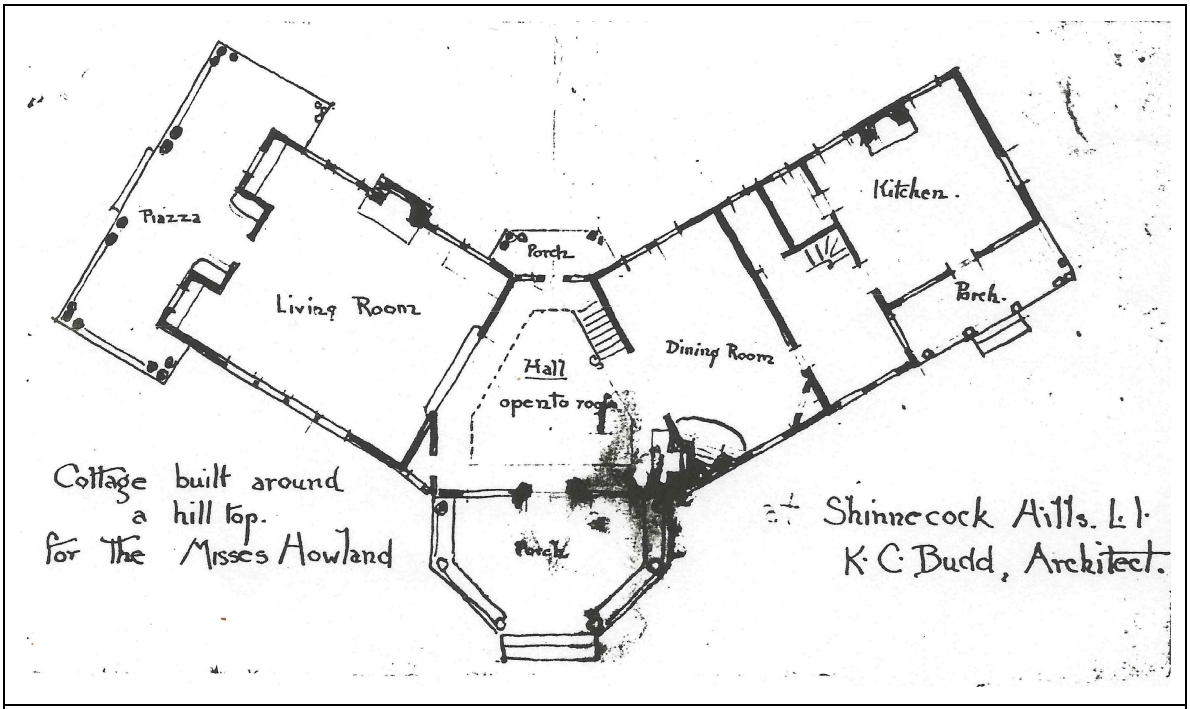

Figure 2.12: Katharine Cotheal Budd, Plan, Cottage for the Misses Howland. Courtesy Victoria Budd Opperman.

The third of Budd's hostess house plan types, according to Ward, was "a simple cube with the addition of two gables and two piazzas. In effect it is an American country house of well-known type."[175] The particular plan highlighted by Ward was number 3. Budd executed hostess houses on this plan at Camps Dix (nonwhite visitors; see figure 2.13) and Dewey, and modified the plan for Camp Eustis, Camp Hancock, and Camp Hill. Like Budd's barn-type houses, the plan 3 houses typically had a lean-to porch to either side of the symmetrical center section of the building. As Ward's description suggests, this central space is a two-story cube whose geometry is disguised by a large gable to either side of the central entrance. Shed dormers

[175] Ward, "Bringing Home to the Army Camps," 100.

projecting from the side roof of each gable-end add second-story space. Photographs of the houses at Camps Dewey, Dix, and Hill all show Tudor-style exterior decoration.[176]

Figure 2.13: Katharine Budd, YWCA Hostess House, Camp Dix (Nonwhite Visitors). Courtesy Victoria Budd Opperman.

The two hostess houses known to have been designed by Julia Morgan—those at Fort MacArthur, in San Pedro, California, and at Camp Fremont, in Palo Alto—are similar to one another in both plan and construction. Both have an I-shaped plan, with double-height public spaces to either end (likely the cafeteria and living room) and an entrance hallway and, perhaps, classrooms, running between them. The tall windows puncturing the buildings' facades counter

[176] See photographs of various hostess houses in VBO collection. At the Camp Dewey house this was most pronounced, with half-timbering on each gable-end and a wooden sign above the entrance again recalling the God's Providence House motto. On the other extreme, while the top story of the gable ends of the Camp Dix (nonwhite) house are covered in stucco and plaster, with some half-timbering, the house's ground story is clad in horizontal siding.; See also drawing of Dix house, which shows siding only below windows of ground story, in Ward, "Bringing Home to the Army Camps," 76.

the horizontality of the long roof with its shed dormers and flattened gables. Both the Camp Fremont hostess house and the Fort MacArthur house, too, were clad in the board-and-batten siding popular in contemporary California residential construction. The open roof trusses in the Palo Alto house's living room nicely complemented the second-floor balcony running along its circumference, and picked up a theme of much of Morgan's work. As Richard W. Longstreth has observed, "Unlike many academicians, [Morgan] was not reticent about exposing structural members frankly, but also had no desire to produce unnecessarily complicated structural effects."[177]

Like the YMCA huts, and like urban YMCAs and YWCAs more generally, the YWCA hostess houses were laid out not just to facilitate visits between soldiers and their women family and friends, but also to allow efficient supervision by the organization's hostesses. In most hostess houses, the front door led to a central entrance hall, within which the building's information desk was located, and from which all or part of both the living room and cafeteria would be visible. As at city YWCAs, what made the mixing of sexes within the hostess houses acceptable to the parents of the soldiers and their girl friends was the organization's assurance that nothing untoward could happen there, exactly because the public rooms of the house were so exposed to the hostesses' gaze. "A soldier and a girl arrive; 'engaged' written all over them," reported a piece in the War Work Bulletin. "They make for the big settee. The emergency

[177] See photographs of the Camp Fremont and Fort MacArthur hostess houses, respectively, in Sarah Allaback, *The First American Women Architects* (Urbana: University of Illinois Press, 2008), 144, and on San Pedro Peninsula Chamber of Commerce, "YWCA—Morgan House," http://www.sanpedro.com/sp_point/ywca.htm (accessed September 11, 2012).; Richard W. Longstreth, "Julia Morgan: Some Introductory Notes," *Perspecta* 15 (1975): 82; The hostess house at Camp Kearny was likely also designed by Morgan; in any case, it is a simpler version of her designs for Camp Fremont and Fort MacArthur. The long, low shed building is fronted by a veranda with plain, widely-spaced pillar. The roof is punctuated by three sets of shed dormers, and the verticality of the first-floor windows is echoed in the half-height balustrade in front of each one. Like the hostess houses at the other two California posts, that at Camp Kearny was clad in board-and- batten wooden siding. See photograph in War Work Council, *Report of Hostess House Committee*, 30.

hostess has what she calls her 'weather eye' out. She pays a casual visit to the unoccupied end of the settee and focuses her kind orbs that have a twinkle of humor in them upon the couple. Decorum that might have been abandoned is restored."[178]

The most complex space within the hostess house was its cafeteria. YWCA representatives were enormously proud of the hostess house cafeteria program, touting it both as a locus of comfort for soldiers and their guests, and as an efficient business operation. In addition, the cafeterias, especially those in Budd's hostess houses, evidenced the interest of the YWCA and its architects in contemporary theories of household efficiency.

The 1918 *Architecture* article on the Camp Mills hostess house devoted considerable space to a description of its cafeteria. Budd's careful arrangement of the food-preparation and -service areas according to their function evidences her interest in efficiency studies along the lines of Frederick Winslow Taylor's work in factories. According to the article's author, "Travel lines are carefully laid out in the architect's first sketches. Effort is made to show the direction of the work of each servant from preparation to completion. Each line is in a different color, and care is taken that no line crosses another. Efficiency is studied and an effort made to simplify all work." And again:

> The location of each class of work and its relation to all the others is first decided. Careful measurements are laid out, distances between tables decided, the probable movements in each process in cooking thought out, the heights of tables and counters decided for various workers . . . . A good floor plan gives space where needed and keeps cubic contents down. Cubic contents run up expense in building: space may be wasted in unnecessary hallways, oversize [or] unimportant rooms, or awkward arrangements.[179]

[178] "The Hostess House Settee," *War Work Bulletin*, no. 26 (April 5, 1918): 1.

[179] "The Hostess House in the Army Cantonment," 268.

In the Camp Mills cafeteria, for instance, beyond the long counter dividing the seating area from the food-preparation area, appliances were grouped according to their use: the stove, sink, and counters together; the tools for cleaning, cutting and cooking vegetables in another compartment; and the refrigerator and butcher block together somewhere else.[180]

Like its architecture, the hostess house's interior decoration reinforced the identity of these spaces with civilian homes. Inasmuch as it did, it further set the YWCA buildings apart from the military buildings around them. The men of the camps, rather than their female visitors, seem to have been the particular targets of the YWCA's decorating schemes. "The home-kindness of our rooms seems to appeal strongly to the boys," wrote a hostess from San Diego in September of 1918. " . . . Frequently some one will start to leave the rooms, but will return to say, 'I want to tell you, I've felt more at home here today than I've felt since I left home.'"[181] Another hostess, writing to the *War Work Bulletin*, theorized, "It is doubtful whether [the soldiers] notice such details as curtains on the windows or flowers on the mantel, but the general effect appeals to them strongly." She quoted a company cook: "'It's powerful pretty, and I think it's fine.'"[182]

The central element, both literally and figuratively, of any hostess house was its hearth. In his book on training-camp welfare activities, *Keeping Our Fighters Fit*, Edward Frank Allen wrote: "Everywhere the very heart of the house is the big chimney in the middle of the huge living-room, where in a double fireplace log-fires burn when they are needed."[183] On the facing

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[180] "The Hostess House in the Army Cantonment," 268.

[181] "Report of Hostess Gallery, Balboa Park," Sept. 16-30, 1918. World War I, Hostess Houses, 1918-19, Naval Base—San Diego, Cal. YWCA of the U.S.A. Records, Sophia Smith Collection, Smith College, Northampton, Mass.

[182] "By a Woman Who Saw," *War Work Bulletin*, no. 8 (November 30, 1917): 2.

[183] Edward Frank Allen, *Keeping Our Fighters Fit* (New York: The Century Co., 1918), 117-118.

page he printed a photograph of "A corner of the living room" of the Camp Devens hostess house, showing a group of adults seated in wicker furniture on a big square rug in front of a stone fireplace (see figure 2.14). The fireplace's mantel is decorated with fresh evergreen boughs; the women are knitting while the soldiers look on.[184]

A corner of the living room, Y. W. C. A. Hostess House, Camp Devens, Ayer, Mass.

Figure 2.14: Living Room, YWCA Hostess House, Camp Devens. Published in Edward Frank Allen, *Keeping Our Fighters Fit* (New York: The Century Co., 1918).

Many contemporary descriptions of hostess house interiors highlighted the softness and fragility of its decorations, a particular point of contrast with utilitarian military architecture and

[184] Allen, *Keeping Our Fighters Fit,* 119.

furniture. Allen, for example, told of a soldier's first visit to the hostess house at his camp. "'Can I stand on the rug in front of the fireplace?' he asked. 'It's the first time I've seen one in so long that I've forgotten the feel of it under my feet.' He finally exclaimed to the boy who was evidently showing him around: 'Gosh, ain't it all nice and refined! I'm coming here every day.'"[185]

Life in the YWCA Hostess House

The activities taking place within the hostess house, like those within the YMCA huts, were an important part of the YWCA's attempt to counter the demoralizing effect of military training. In the hostess houses, however, one particular activity was paramount: quiet visiting between soldiers and their women visitors, or even among soldiers alone. The hostesses worked to create an atmosphere of quiet conviviality that was unknown elsewhere in the Army training camps, even in the buildings belonging to the other welfare associations. "The boys come to the House just as they come to the Y.M.C.A. Huts," the head of the YWCA Hostess House Committee wrote in her history of hostess-house work, "but we give them something that they cannot give them. We do not entertain the boys, we give them a quiet comfortable seat with a book, by a fire . . . ."[186]

The hostess house nursery was a special attraction for both women visitors and single soldiers alike. A piece in the *War Work Bulletin* entitled "Babies Have a Room" highlighted the novelty of the idea. When a new mother "saw the immaculate little beds, her eyes filled with

[185] Allen, *Keeping Our Fighters Fit,* 128.; See also "An Official View of the Hostess House," *War Work Bulletin*, no. 33 (June 14, 1918): 3

[186] Mrs. Edward M. Townsend, "Hostess Houses," April 10, 1918. World War I, Hostess Houses, Miscellaneous, Miscellaneous Data. YWCA of the U.S.A. Records, Sophia Smith Collection, Smith College, Northampton, Mass.

tears and she said, 'I never dreamed there was such a place here,'" the article recalled.[187] Thanks to the baby-friendly facilities at the hostess house, wives could bring their children with them to meet their fathers, some for the first time. Even soldiers without families of their own took to looking in on the little ones in the children's room. "It's not so much the great living room with its huge fireplace, nor the big cafeteria that seats two hundred persons at a time, nor even the comfortable smoking room of the Hostess House, but the nursery that soldiers at Camp Lewis, American Lake, Washington are exhibiting with the greatest delight to their friends," recorded a dispatcher for the *War Work Bulletin*. "[M]an after man comes in and asks, 'May I show my friend the nursery? It's the first real bit of 'home' we have had since we came here.'"[188]

Other YWCA services fit around the hostess house's emphases on chaperonage, quiet visits, and cafeteria service. The primary benefit the hostess house offered to women, of course, was a place for them inside the camps. "I think the Army started out with the idea that there would be no women, but the women did come to the camps to visit the men," the director of the hostess house program recalled. "There were no opportunities or places where any woman could go to meet her man. They sat on barrels, sat on fences, etc., and there was a great unrest in the commanding officers' minds as to how to handle the mothers and sisters and wives of the men in training who felt they must see the boys."[189] YWCA hostesses also offered concrete help to female guests, loaning women forgotten articles of clothing, and putting up family members of sick soldiers overnight.[190]

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[187] "Babies Have A Room," in "About Hostess Houses, special issue, *War Work Bulletin*, no. 18 (February 5, 1918): 4.

[188] "In the Day's Work," *WWB*, no. 9 (December 7, 1917): 3.

[189] Townsend, "Hostess Houses," 1.

[190] Cora R. Sivyer to Mrs. E. M. Townsend, August 10, 1918. World War I, Hostess Houses, 1918-19, Kelly Field, Texas. YWCA of the U.S.A. Records, Sophia Smith Collection, Smith College, Northampton, Mass.; "Bulletin #5,"

Hostess house staff, further, claimed to be educating by example in the camp buildings. The author of "Only Two Kinds of Pie" wrote that, in addition to serving women visitors and creating a homelike space for men, the hostess houses, "Through their cafeterias . . . aim to be a means of education and example to the women who visit the soldiers. Not a few of the guests," she went on, "have had no opportunity to understand what food conservation means nor what substitutes for their ordinary diet the [United States Food Administration] is suggesting." YWCA leaders understood the educational aspect of hostess-house work to be of particular relevance among nonwhite visitors. A December 1918 War Work Bulletin article on the so-called colored hostess houses argued that, "Aside from their other services, the Hostess Houses also serve as an example of how to furnish a house in good taste and to serve meals that conform to the food regulations . . . ."[191]

YWCA workers also kept an eye out for, and on, young women who had traveled to the training camps for the wrong reasons. The hostesses at the hostess gallery in Balboa Park, San Diego, for instance, became concerned for a girl who, accompanied by her sister, had followed her boyfriend to camp. "[I]t finally developed," reported a hostess, "that she and her sister were both girls of very unfortunate reputations and so they were through our workers['] discovery of them, advised by police authorities to return to their home." "I'm sure the kindly words of [advice] given them," she went on, "must bear its fruit, no matter how hardened the girls seem

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n.d. [ca. 1918]. World War I, Hostess Houses, Miscellaneous, Bulletins, 1918-19. YWCA of the U.S.A. Records, Sophia Smith Collection, Smith College, Northampton, Mass.

[191] "The Colored Girl Gets Her Chance," *War Work Bulletin*, no. 51 (December 6, 1918): 3.

kindness and friendliness seem to touch them greatly. Every day has brought its incidents in this protective side of the work also."[192]

Outside visiting hours, YWCA hostesses lavished attention on the servicemen who came to the hostess house. Soldiers visiting the hostess house found an environment different from both their spare barracks and the noisy YMCA huts. The hostess house, explained one history of the program, was "not least where the soldier himself can find a comfortable chair by the fire, a quiet nook to read or write, a woman's welcome from the Hostesses when he has no guest of his own, a dainty supplement to his heavy ration and a touch of home within the camp."[193] For soldiers wanting some time to themselves, the hostess house's lounge was stocked with books provided by the ALA and newspapers donated by publishers.[194] Hostesses were available to help with personal crises, such as the unraveling of a favorite sweater. The soldier in question, upon seeing it repaired by the YWCA workers, cried, "'I am so glad to have it right again because my mother made it.'"[195]

If the YMCA secretary was a surrogate Dad, the YWCA hostess was a surrogate mother, particularly to the soldiers. A *War Work Bulletin* profile of Mrs. E. M. Townsend, chairwoman of the Hostess House Committee of the YWCA, emphasized her experience in real-life motherhood as preparation for heading the hostess house program. "She has two sons of her own

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[192] "Report of Hostess Gallery, Balboa Park, San Diego," March 1-March 15, 1918. World War I, Hostess Houses, 1918-19, Naval Base—San Diego, Cal. YWCA of the U.S.A. Records, Sophia Smith Collection, Smith College, Northampton, Mass.

[193] "Hostess House," n.d. [ca. 1918]. World War I, Hostess Houses, Miscellaneous, Miscellaneous Data. YWCA of the U.S.A. Records, Sophia Smith Collection, Smith College, Northampton, Mass.

[194] Meeting minutes, May 15, 1918. World War I, War Work Council, Hostess House Committee: minutes, 1917-18. YWCA of the U.S.A. Records, Sophia Smith Collection, Smith College, Northampton, Mass.; Meeting minutes, August 21, 1918. World War I, War Work Council, Hostess House Committee: minutes, 1917-18. YWCA of the U.S.A. Records, Sophia Smith Collection, Smith College, Northampton, Mass.

[195] "Hostess House Days," *War Work Bulletin*, no. 15 (January 18, 1918): 2.

who went into the service at the beginning of the war and she knew what appeals to the man in camp," the piece began, "—the man who appreciated the dishes mother cooked, the delicate china used at home, and the softly cushioned lounges, filled pipe and handy tobacco jar as he never did before."[196]

As surrogate mothers, one of the most important things the YWCA hostesses offered soldiers in training camps was an ear for the emotional pains associated with separation from their family. A hostess reporting from Wilbur Wright field wrote, "Many homesick boys have come into the office looking for some one who might understand and sympathize with them asking if we have time to talk with them: they are never ashamed to tell that they are homesick and lonely, and that it will mean much to them if we should let them visit a while," she explained.[197] A hostess at another airfield confirmed, "One of the high officials of the camp," she noted, "said that we couldn't render our country a greater service than that of cheering and encouraging these boys when we see that they need such comfort and help."[198]

YMCA and YWCA Architecture After the War

Not long after the signing of the armistice, the United States Army and Navy "militarized" the training-camp welfare program, absorbing the services previously performed by the YMCA, the YWCA, and other organizations into the military hierarchy. The YMCA and YWCA both left the camps, the YMCA donating most of its huts for continued use by the

[196] "Mrs. E.M. Townsend," *War Work Bulletin*, no. 59 (February 7, 1919): 3.

[197] "Hostess House, Wilbur Wright Field, Dayton, Ohio," October 1-31. World War I, Hostess Houses, 1918-19, Wilbur Wright Field, Dayton, Ohio. YWCA of the U.S.A. Records, Sophia Smith Collection, Smith College, Northampton, Mass.

[198] Cora R. Sivyer to Mrs. E. M. Townsend, June 21, 1918. World War I, Hostess Houses, 1918-19, Kelly Field, Texas. YWCA of the U.S.A. Records, Sophia Smith Collection, Smith College, Northampton, Mass.

military, the YWCA salvaging as many of its hostess houses as possible. But this is not to say that the organizations returned to business as usual: to the contrary, both adjusted their building programs to fit the lessons learned in war.

In the years immediately following the Great War, the YMCA's urban building program changed substantially. Two developments are of particular note. First, after the war the Building Bureau shifted its attention from complicated city buildings to smaller, simpler "community" structures. Lupkin explains, "Branch buildings had existed before, as had buildings of different sizes for cities of different populations, but this was the first time that the model for design was not the large, complex 'city' building."[199] Second, during 1919 and 1920 the Building Bureau completed its evolution from an advisory department to a full architectural service. As a result, the YMCA buildings constructed during the 1920s both were aesthetically more consistent and had plans better suited to their functions.[200]

Both of these changes—a shift from city- to neighborhood-scale buildings, and the absorption by the Building Bureau of all stages of YMCA building design—were influenced by the organization's cantonment work. The connection between the hut-building program and the centralization of the YMCA's design work is the more speculative of the two, but the following, at least, is clear. Before the war, the Building Bureau offered an advisory service to local YMCAs constructing new buildings. For a fee, Bureau staff would advise the architect chosen by the local organization as to the YMCA's programmatic peculiarities, but it stopped short of actually designing the building; this was still the domain of the outside architect.[201] During the

[199] Lupkin, *Manhood Factories*, 197.

[200] Ibid., 164-7.

[201] Ibid., 164.

war, in contrast, the War Work Council's Division of Construction was solely responsible for all aspects of the hut-building program, from conception to design and construction. In the years just after the armistice, Neil McMillan—head of both the Bureau and the wartime Division of Construction—altered the Building Bureau along similar lines, eliminating the need for outside architects. It seems unlikely that McMillan would have made such a change had the wartime administrative structure not proven successful. He may even have structured the Division of Construction in anticipation of an increase in the Building Bureau's responsibilities.

Whether the Division of Construction was born of wartime necessity, or was a conscious experiment by McMillan in the centralized administration of design work, the postwar consolidation of architectural output under the Building Bureau improved the quality of YMCA building design, at least according to that organization's representatives. Charles C. May wrote in the *Architectural Record* about the extent to which local architects tended to misunderstand the YMCA program. The prewar Building Bureau would provide the architect with blueprints of previously-constructed YMCA buildings as a guide to his design, May explained. But "As often as not, the main idea was overlooked, and minor specialties, visible to a superficial eye, were pounced upon for use in a plant where they applied not at all."[202] The postwar Building Bureau would, by contrast, bring architects and experts on the YMCA program together in its New York office, and thus would "make their future plants increasingly the expression of a focusing of the most able and widely distributed architectural talent of the country upon their problems."[203]

While the link between the hut-building program and the postwar reorganization of the Building Bureau remains somewhat tenuous, the new community YMCA buildings introduced

[202] May, "A Post-War Construction Program," 220.

[203] Ibid.

after the war were directly modeled on the cantonment huts. After the war, the YMCA appointed a special Commission on the Conservation of the Values of the War Work to make recommendation as to what wartime innovations the organization should retain. Correspondence with soldiers and others who had visited the training-camp YMCAs indicated "a popular enthusiasm for the general idea of the hut."[204] But the Commission's November 1919 report explained that because the cantonment huts had been built of wood for temporary use, it would be impossible to replicate them exactly outside Army posts and other special spaces—community fire codes simply wouldn't allow the erection of such flimsy structures.[205]

It was the *character*, rather than the particular built environment, of cantonment hut work that the Commission recommended introducing to the peacetime YMCA building program. In a section of the report on the "Psychological Effect" of the hut program, Commission members argued, "The simplicity and informality of the hut, which caught the fancy and won the approval of the enlisted man, should be carefully preserved in our permanent work."[206] Excerpts from soldiers' letters included in the report emphasized the convenient locations of the huts ("in the very midst of the people it is sought to reach"); the lack of "constraint" on soldiers' behavior within the huts; the "democratic" nature of the spaces; the variety of the hut program; and the huts' "homelike" decoration, with "Nothing to attract attention but all worthy of it."[207] The Commission also listed the successful service features found in the huts, which included both

[204] "Report of the Commission on the Conservation of the Values of the War Work to the Fortieth International Convention of Young Men's Christian Association," November 19-23, 1919, 6. Miscellaneous Red Triangle Publications ca. 1918-1920. Armed Services: World War I (Y.USA.4-1). Kautz Family YMCA Archives. University of Minnesota Libraries.

[205] Ibid.

[206] Ibid., 7.

[207] Ibid.

spaces (like the billiards room and library) familiar to members of urban YMCAs, and the kinds of flexible spaces ("Auditorium capable of adaptation for religious meetings, gymnasium, and theater") that allowed the size-limited regimental hut to serve a variety of needs.[208]

The Commission report recommended the building of small, hut-type recreational spaces in areas previously neglected in favor of center-city YMCAs, including factory and mill towns, amusement parks, and suburban neighborhoods. The neighborhood YMCA hut, which became the centerpiece of the organization's immediate postwar building program,[209] was a logical extension of the YMCA's training-camp work. After all, a regimental group was to a divisional training camp was what a neighborhood was to a city or suburb. The distribution of small buildings regiment by regiment in lieu of a single central YMCA had worked well in the cantonments; why couldn't the same strategy best serve residents of America's civilian cities and towns?

Given the community-center program's basis in the wartime hut program, it is perhaps no surprise that the Building Bureau's postwar plans for neighborhood YMCAs closely resemble those of the regimental huts. The type C-2 community building, as illustrated in May's *Architectural Record* article (see figure 2.15), had, like the type E cantonment hut, 2 wings, one each filled by a social room and a multipurpose gymnasium and auditorium. The C-2 community building was more complex than the E buildings had been, with a billiards room attached to the social room and additional recreational facilities in the basement, but it was nevertheless much simpler than a prewar city building. The multipurpose wing also retained the spirit of the camp buildings' flexible program. The building's exterior, in the English cottage

[208] Ibid.

[209] Lupkin, 197.

style with a shingled roof and dormer windows, likewise marked its divergence from the YMCA's city-center buildings, and brought it closer to the cantonment hut standard. Though the C-2 building differed from the typical training-camp hut in its materials and the extent of its architectural treatment, both types were distinctly domestic in appearance, rather than inspired by commercial or civic architecture like the prewar YMCAs.[210]

[210] May, "A Post-War Construction Program," 218, 222.

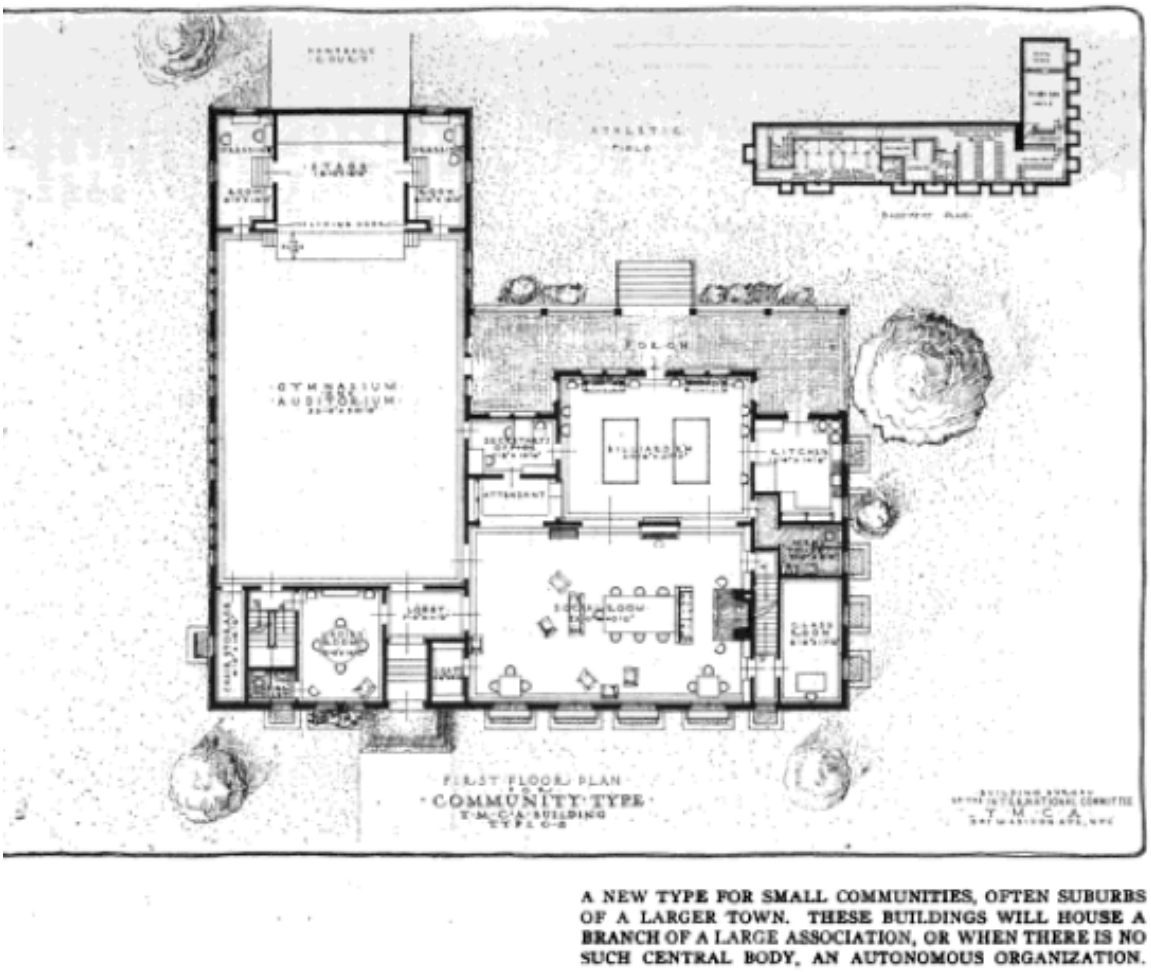

Figure 2.15: YWCA Community Building Type C-2. Published in Charles C. May, "A Post-War Construction Program: The Building Bureau of the International Committee of the Y.M.C.A., Part I, " Architectural Record 45, no. 3 (March, 1919).

Finally, the Commission's report on YMCA war work may have speeded the secularization of the urban YMCA program. Of course, worship services and Bible studies had been an important part of the cantonment hut experience. And civilian YMCAs across the United States had already embraced secular recreation to an extent unforeseen by the

organization's founders. But "in the war work," wrote the commissioners, "there was a comprehensiveness and a reality in the service that covered the entire needs of the men away from home. The balanced program gripped the lives of men." In the future, they urged, the YMCA should avoid focusing too much on any one aspect of its program, including its religious basis.[211] After all, the majority of the soldiers who flocked to the cantonment huts hadn't been looking for Jesus Christ. They had instead sought nothing more than a place where they could put their feet up, watch a film or a read a newspaper, and forget, for a time, what was happening Over There.

The YWCA's city buildings, too, changed after the end of World War I. The urban YWCAs constructed during the 1920s looked more like hostess houses and the precedents that shaped them, including Arts and Crafts residential designs and Julia Morgan's Asilomar and PPIE building, and less like their original models, the city YMCAs of the late nineteenth century. The YWCAs of the prewar period were monumental, self-consciously urban buildings with tightly structured plans. The postwar YWCAs, in contrast, were smaller in scale and yet more flexible in use, with fewer but larger rooms intended to meet a variety of needs.

Julia Morgan herself designed over a dozen city YWCA buildings in the years following World War I. One of her earliest was the "Y Cottage" at the University of College, Berkeley, built with YWCA War Work Council funds to carry on the organization's work with students that had begun during the war.[212] The low, many-gabled building had a nondescript exterior punctuated by tall rectangular windows; on the interior, it looked almost exactly like a hostess house. A contemporary photograph shows visiting men and women sitting in wicker chairs in

[211] "Report of the Commission on the Conservation of the Values of the War Work," 8.

[212] YWCA Berkeley, "Mission & History," http://www.ywca-berkeley.org/mission-history/ (accessed September 12, 2012).

front of a brick fireplace. The two-story space is almost entirely without partitions, a short half-wall serving to separate the fireplace area from a door to an adjacent room or hallway. A mezzanine balcony and exposed trusses serve to diminish the space's height, while a row of French doors dissolves the boundary between the building's interior and exterior.[213]

Morgan's more elaborate postwar YWCAs also seem to have been influenced by her hostess house designs. Though the exterior of her sprawling YWCA headquarters building in Honolulu, Hawaii, for example, is in a hybrid Italian Renaissance-Spanish Mission style, its interior has a distinct Arts and Craft flavor. In the building's combination library-sitting room, a series of unornamented arches segment the space into smaller areas for sitting and reading without actually obstructing either visitors' circulation or the gaze of the YWCA matrons. The ceiling is crisscrossed with exposed beams.[214]

Morgan was not the only YWCA architect whose postwar designs echoed the simplicity and multi-functionality of the hostess houses. William F. Thompson, a consulting architect headquartered in New York City, designed a series of city YWCAs during the 1920s according to the same formula: living room, kitchen, gymnasium, plus a few smaller spaces for the building's administration. In his Erie, Pennsylvania, YWCA (see figure 2.16), for instance, the large entrance hall doubled as a living room; it connected via a small lobby to a 130-seat self-service cafeteria. Stairs at the opposite end of the entrance hall led to a gymnasium, which, with a stage, could also accommodate large meetings and performances. Thompson's rectangular YWCA building for Waterloo, Iowa (see figure 2.17) was even more flexible in plan. To the left

[213] See photograph at Robert E. Kennedy Library Special Collections and University Archives, "YWCA Berkeley, Interior," http://digital.lib.calpoly.edu/cdm/singleitem/collection/p15114coll3/id/1065/rec/69 (accessed September 12, 2012).

[214] See photograph at Robert E. Kennedy Library Special Collections and University Archives, "YMCA Honolulu, Metropolitan Headquarters, interior, Library and Sitting Room," http://digital.lib.calpoly.edu/cdm/singleitem/collection/p15114coll3/id/1108/rec/142 (accessed September 12, 2012).

of the entrance hall was a gymnasium with a folding stage; to its right, a social room connected via a removable partition to the cafeteria.[215] Interior photographs of Thompson's 1920s YWCAs show that while he preferred a neo-Colonial architectural style, he, not unlike Morgan, utilized partial rather than full walls to break larger spaces into multiple, more intimate, areas.[216]

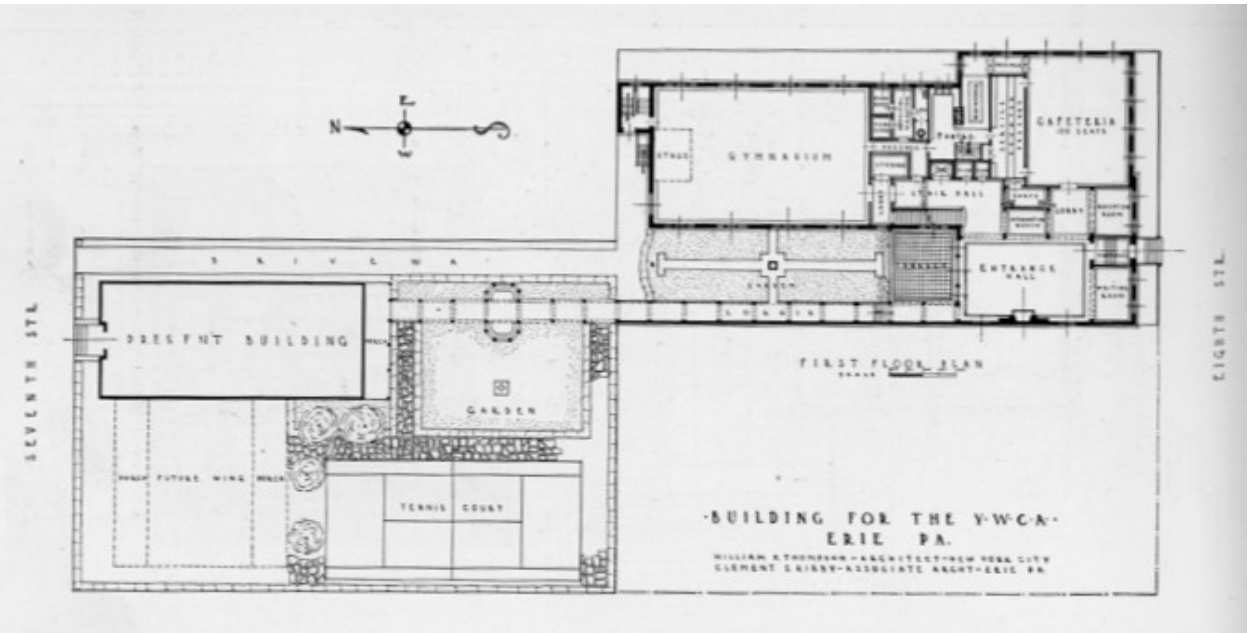

Figure 2.16: William F. Thompson, YWCA Building, Erie, Pennsylvania (Built ca. 1923). Published in "Buildings for the Y. W. C. A.," *Architecture* 48 (October 1923).

[215] "Buildings for the Y.W.C.A., by William F. Thompson, Architect," *Architecture* 38, no. 4 (October 1923): 340-346.

[216] "Y.W.C.A. Building, Plainfield, N. J., Y.W.C.A. Building, Galveston, Texas, . . . Y.W.C.A. Building, New Bedford, Mass." *Architecture* 53, no. 5 (May 1926): plates LXXXI-LXXXVIII.

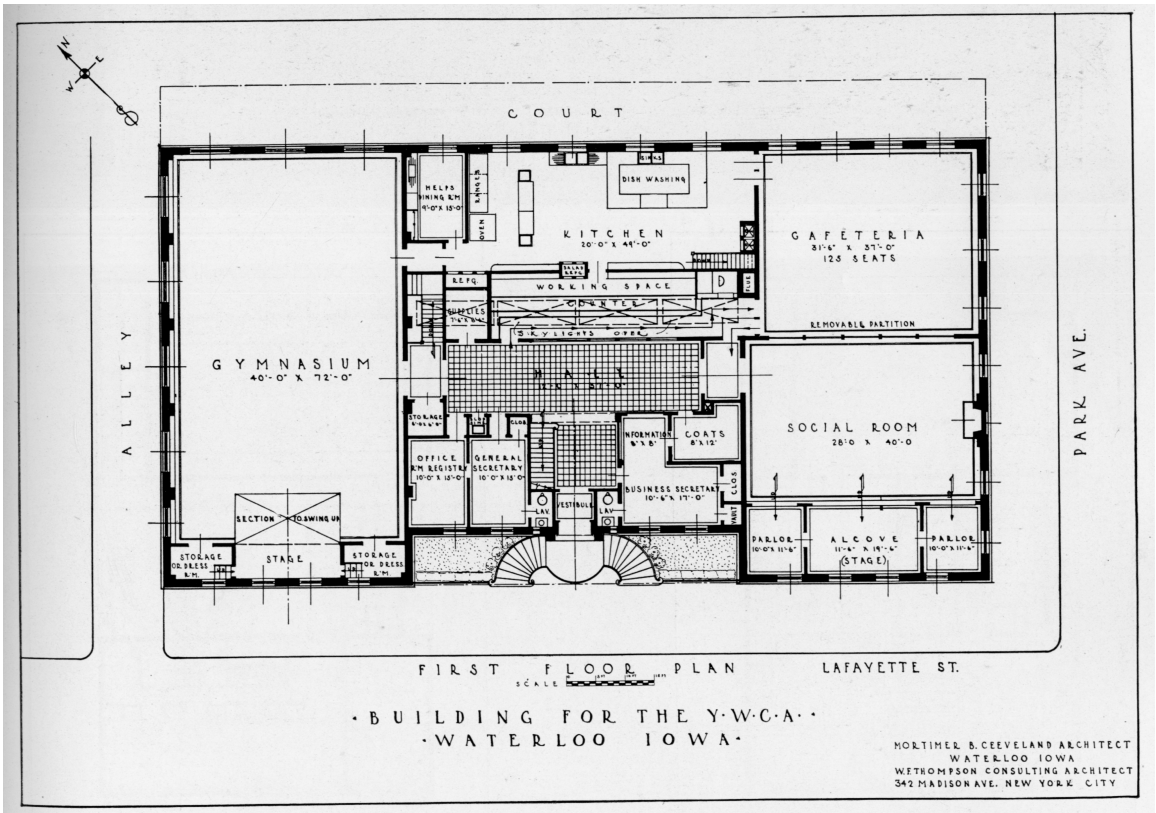

Figure 2.17: William F. Thompson, YWCA Building, Waterloo, Iowa (Built ca. 1923). Published in "Buildings for the Y. W. C. A."

The architectural opening-up of the YWCA after World War I foreshadowed a gradual but undeniable shift in the organization's mission. The organization had, from its beginnings, pushed the boundaries of Victorian gender norms, justifying the involvement of upper-class women in urban reform as an extension of the domestic sphere, and supporting working women's financial independence as a necessary evil of industrial capitalism. But starting in the 1920s, the YWCA would amplify its efforts to support professional women of all classes, and would downplay its historical identity as a religious organization born in the parlors of the upper class.

That the YWCA would abandon the separate spheres ideology in the wake of the hostess house program is perhaps no surprise. The training-camp project represented an important

moment in women's history: for the first time, American women had a literal place *inside* the military, not just as wives in officers' housing, but in a space designed by and for them. Though the hostess houses were clad in the trappings of traditional residential architecture, their flexible, multipurpose interiors suggested that the women who designed the houses saw in them an opportunity for the creation of new social and not just spatial arrangements. Fay Kellogg, Katharine Budd, and Julia Morgan were, after all, themselves twentieth-century New Women—women who had already built for themselves a space outside the expected.

Conclusion

Both the YMCA and the YWCA defined their World War I buildings against the Army cantonments in which they were built. The YMCA huts and YWCA hostess houses, their supporters claimed, offered an antidote to the demoralizing effects of military training. As such, the hut and hostess house programs paralleled the organizations' urban work, in which upper- and middle-class sponsors worked to uphold traditional moral values in the face of changing social and economic conditions. But neither the YMCA nor the YWCA had faced a test like World War I before—in the training camps and beyond, the organizations operated on an unprecedented scale and scope.

Both organizations, as a result, appear to have learned both programmatic and architectural lessons from their in-camp experiences, lessons that they would apply to civilian America during the postwar period. For the YMCA, the success of the Army huts led to a postwar building program focused on neighborhood-scale recreation centers. It may also have encouraged the Building Bureau to centralize the construction of urban and suburban YMCAs. The YWCA similarly approached the design of urban buildings after the war as it had the hostess

house program, creating simplified, flexible spaces designed to facilitate social interactions on a variety of scales. In both cases, the change in building program prefaced a profound change in organizational mission, one in which Victorian moral standards no longer had a place.

Chapter 3: Civilianizing Army Housing: The War Department Housing Program and the Prewar Suburb

Introduction

If the cantonments of World War I were "magic cities," the permanent Army posts of the early 1920s were altogether too real. Housing was a particular problem, with barracks and officers' quarters—some more than half a century old, some temporary structures leftover from the war—in disrepair. In a 1926 guide to Army posts ("The Baedeker of the Army," according to the book's subtitle), Captain Charles J. Sullivan detailed the extent of the housing problem at each reservation. At Mitchel Field, on Long Island, married officers lived in "56 old frame sets of the temporary type, semi-modern, poor condition . . . ."[217] At Camp Lewis, similarly, nearly all of the same type of quarters were "old converted cantonment buildings made habitable by a great deal of work and enough expense to have built a great many real sets."[218] Army officials worried about the impact the posts' decay had on retention rates: the low morale brought on by poor living conditions had resulted in "a very high and discouraging percentage of desertions," Secretary of War Dwight F. Davis alleged in 1925.[219]

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[217] Charles Jackson Sullivan, *Army Posts and Towns: The Baedeker of the Army* (Burlington, VT: Free Press Printing Co., 1926), 77.

[218] Sullivan, *Army Posts and Towns*, 223.

[219] Davis's annual report to the president quoted in "Army's Condition Declared Critical in Davis' Report," *Washington Post*, December 6, 1925.

Conditions began to change in 1926, when the Army inaugurated a massive post-renovation program known as the War Department Housing Program (WDHP; variously the Army Housing Program). The influx of funds dedicated to the replanning and rebuilding of barracks and officers' quarters nationwide allowed the Army to consolidate and redistribute troops according to the organizational mandates of the 1920 National Defense Act. More significantly, through the WDHP the Army redefined itself spatially as a particularly *American* institution that prized individuality and privacy as much as it did uniformity and hierarchy. For the officials in charge of the WDHP, planning and architecture were critical tools in the reformation of the Army between the two world wars.

As during the Great War, during the WDHP military officials relied on civilian design professionals to materialize their vision of the new Army. The pivotal figure in this episode was George Burdett Ford, a New York consultant and active participant in the American city planning movement. To a lesser degree, Arthur Loomis Harmon also played a role in the WDHP, as architectural advisor.

Ford's work for the WDHP in particular both reflected and helped to shape contemporary ideas about effective city planning. The planners who had laid out the cantonments of World War I had conceptualized the Army training camp as a homogeneously urban space, with separate zones for work, residence, and recreation, and with residence segregated by military rank, per Army policy. Ford took the separation of work and residence one step further, removing the officers' housing from the central post to self-contained enclaves planned according to suburban design principles. Ford's Army post plans reflected his conviction that the best place to live, particularly for members of the middle and upper classes, was *outside* the

city altogether, in suburban developments protected by zoning and other controls against densification and the encroachment of competing land uses.

Ford was not alone in suggesting that the removal of housing to a city's surrounds would help to solve the problems associated with urban congestion. As a leader in the early twentieth-century city planning movement, Ford saw his argument in favor of suburbanization published in popular architectural and city-planning journals, and discussed at national conferences. While historians have offered a number of explanations for America's love affair with the suburbs, including changing ideas about the family and the availability of cheap rapid transit, the support of some city planners for the suburbanization of middle-class housing has been overlooked.[220] Ford's story helps to correct this imbalance.

The architecture of the WDHP reinforced the identity of the renovated Army posts with civilian cities and suburbs. Military officials expected that the application of particularly American architectural styles to post buildings would help to reverse the stereotype of the military as an anti-democratic institution. Local variations in style, moreover, would tie individual posts to their neighboring communities as well as to the centralized Army command apparatus. On a more practical level, the architectural improvement of officers' housing would make accepting an Army commission as attractive as taking a white-collar civilian job. In other words, the Army officials responsible for the WDHP hoped that it would, by making military posts spatially indistinguishable from civilian communities, negate some of the difficulties inherent to raising a volunteer Army in a decentralized democracy.

The WDHP prefigured the federal government's support for suburbanization and concordant neglect of the inner city in the decades beginning with FDR's presidency. The

[220] See, for example, Jackson, *Crabgrass Frontier* and Fishman, *Bourgeois Utopias*.

suburbanization of officers' housing gave official sanction to a conviction already shared by many civilians that the city was no longer a good place to live. The impact within the Army of the separation of housing according to rank was relatively benign, as it constituted a symptom rather than a cause of military hierarchization. But in the world outside the Army post, the government-supported spatial segregation of Americans by class and race would have dire consequences not just for the United States's built environment, but for American social relations more generally.

This chapter begins with a brief introduction to the WDHP and Ford's involvement in the same, followed by an overview of the history of suburbanization in the United States up to the 1920s. It then turns to Ford's work as WDHP city planner, taking his plans for Fort Lewis and Governors Island as case studies. It next considers the architectural side of the WDHP program, and particularly the question of style and Army post architecture. The chapter concludes with a look forward to federal support for suburbanization during the New Deal and the years immediately following World War II.

The War Department Housing Program

The War Department inaugurated its base renovation program in early 1926, following the passage of legislation that proposed using the proceeds from the sale of surplus Army reservations to finance new construction.[221] The WDHP followed years during which Army construction was almost at a standstill, and during which much of the wartime staff of the Construction Division—now the Construction Service—departed for other posts or for civilian

[221] The Wadsworth-Hill Act, signed into law on March 12, 1926.

jobs.[222] But by 1923, worsening housing conditions were prompting embarrassing investigations by the popular press. The Secretary of War responded with a proposal for a base renewal program valued at $110 million over ten years.[223]

The WDHP was more than an answer to media criticism of Army housing. It was also an opportunity to reform the Army spatially according to the mandates of the 1920 National Defense Act. This landmark legislation settled, at least for the time being, the question of military format: Would the American Army, as Chief of Staff General Peyton C. March and reformer General Emory Upton hoped, be a professional force large enough to serve as the skeleton of a wartime draft Army? Or would the Regular Army, as most members of Congress desired, comprise a reduced force whose primary duty was to train civilian members of the National Guard and the Organized Reserves? The 1920 Act landed in favor of the latter scheme, which privileged the ideal of the citizen-soldier over that of a centralized, professional—and some would say, un-American—fighting force.[224]

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[222] Lenore Fine and Jesse A. Remington, *The Corps of Engineers: Construction in the United States*, United States Army in World War II, The Technical Services (Washington, DC: Center of Military History, United States Army, 2003), 43-4, http://www.history.army.mil/html/books/010/10-5/index.html (accessed September 12, 2012). In August of 1921, Secretary of John W. Weeks issued a moratorium on permanent construction except where absolutely necessary. As a consequence, spending on military-post construction fell to an average of $755,893 per year.

[223] Fine and Remington, *The Corps of Engineers*, 45-7.

[224] Richard W. Stewart, ed., "Between World Wars," chap. 2 in *American Military History Volume II: The United States Army in a Global Era, 1917-1923*, Army Historical Series (Washington, DC: Center of Military History, United States Army, 2005), 53-76, http://www.history.army.mil/books/AMH-V2/AMH-V2-PDF.htm (accessed September 12, 2012). Under the 1920 National Defense Act, the Army of the United States was to be composed of three organizations: the Regular Army; the National Guard; and the Organized Reserves. The Regular Army, with an authorized maximum strength of 280,000, was too small to form the skeleton of a wartime army. Up to 17,726 of these men-- triple the prewar number--were to be officers. Thus the Regular Army would be equipped to fulfill its new mission, training the National Guard and the Reserve troops. In addition, the 1920 National Defense Act required half of the officer force to be made up of non-Regular veterans of the Great War and compelled Army officials to make promotions from a single list of candidates, effectively prohibiting discrimination on the basis of time spent in a Regular unit.

The National Defense Act of 1920 had an immediate effect on the location and relative importance of Army installations across the continental United States. According to the Act, the Army of the United States was to be distributed evenly throughout nine corps areas, geographical regions with approximately equal civilian populations. Each corps areas would house six infantry divisions, of which only one belonged to the Regular Army.[225] The WDHP offered the first real chance since the passage of the National Defense Act to renovate existing Army posts and build new ones according to these mandates.

But while the National Defense Act effected a lesser expansion of the Regular Army than an Uptonian scheme would have, the theory that underlay it suggested a substantial improvement in living conditions for recruits. That is, if members of the Army were to be citizens first and soldiers second, they should be able to expect roughly the same standard of housing they might inhabit in civilian life. In an all-volunteer force that competed for officers with private-sector employers, quality of life on Army posts mattered. Under the WDHP, Ford and the Quartermaster Corps created spaces that mimicked contemporary cities and suburbs in part to solve the problem of recruitment and retention as posed by the reorganization of the Army under the National Defense Act.

George B. Ford brought a history of wartime architectural work and a reputation as one of the United States's foremost city planners to his work for the WDHP.[226] Ford, who studied at

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[225] Stewart, ed., "Between World Wars," 58.

[226] Ford was in fact the second choice for the job. The first, as recommended by Ulysses S. Grant III of the Office of Public Buildings and Public Parks of the National Capitol, was Charles W. Eliot II. Eliot was the grandson of Harvard University President Charles William Eliot and had earned a master's of landscape architecture from Harvard just three years earlier, in 1923. But within a month of Eliot's appointment, Grant visited Quartermaster General Cheatham to explain that Eliot did not have time to complete the kind of studies such a project required.

B. F. Cheatham to the Secretary of War, "Technical advice on post planning," October 1, 1926. 600.1 (1926) Miscellaneous Correspondence (1927) (Compiled). General Correspondence Subject File, 1922-1935 (GCSF, 1922-1935). Records of the Office of the Quartermaster General, Record Group 92 (RG 92). National Archives at

Harvard University and at the École de Beaux-Arts,[227] headed the Red Cross's Reconstruction Bureau during the Great War, then worked with the French Renaissance des Cités to replan bomb-torn Rheims, among other cities. He also gave lectures on city planning to the American Expeditionary Force Art Training Center in Bellevue, Seine-et-Oise, France.[228] Ford, who would go on to found the journal *City Planning*, was present at the first National Conference on City Planning in 1909. He joined Frederick Law Olmsted, Jr. and E. P. Goodrich as delegates of the same organization to the Council on National Defense at the start of World War I. After the war, as part of Goodrich's Technical Advisory Corporation, he worked with over 100 planning commissions in 30 cities. A lifelong advocate of zoning and other environmental controls, Ford was a consultant to the Committee on City Planning of the Board of Estimate and Apportionment, and to the Commission on Building Districts and Restrictions for New York City. Later he served as an adviser on the Russell Sage Foundation Plan of New York and its Environs, and at the time of his death was general director of the New York Regional Plan Association.[229]

College Park, College Park, MD (NACP); Bruce Lambert, "C. W. Eliot 2d, 93, An Early Advocate of Urban Planning," *New York Times,* March 19, 1993.

[227] Ford's thesis was on "A tenement in a large city." See John W. Reps's notes at the top of George B. Ford, "The Technical Phases of City Planning," in *An Introduction to City Planning: Democracy's Challenge to the American City*, ed. Benjamin Clarke Marsh (New York: Privately Printed, 1909), http://www.library.cornell.edu/Reps/DOCS/ford'09.htm (accessed September 13, 2012).

[228] For more on the Bellevue center see George S. Hellman, "The A.E.F. Schools of Art," *New York Times,* July 27, 1919; Alfred Emile Cornebise, "The Art School," in *Soldier-Scholars: Higher Education in the AEF, 1917-1919* (Philadelphia: American Philosophical Society, 1997), 97-122.; "Report of the American E.F. Art Training Center, Bellevue, Seine-et-Oise, March-June 1919." Bibliography, Texts. George B. Ford Collection, 1896-ca. 1930 (GBF). Special Collections, Frances Loeb Library, Harvard University Graduate School of Design (FLL-SC).

[229] "George B. Ford Dies; Noted Architect," *New York Times*, August 15, 1930; See also John W. Reps's notes at the top of Ford, "The Technical Phases of City Planning."

The Suburbanization of the United States, 1815-1941

The civilian context for the WDHP was one in which the balance of the United States's built environment had just tipped in favor of the suburban over the urban.[230] Suburban historians agree that upper- and middle-class families fled the city center beginning in the late-nineteenth century in order to escape the social and spatial ills there. This reaction against industrial capitalism and the spaces it created was, in turn, closely related to a shift in the definition of the home, which had been the locus of production but now was understood as a moral safe haven to be kept at a distance from the workplace. In this new world of separate spheres, privacy was the paramount cultural value, and the city's inability to offer much privacy to its residents was one of its principal failings.[231]

In its planning and architecture, the characteristic American suburb of the late-nineteenth and early-twentieth century was neither urban nor rural, but a combination of both: what art historians call the picturesque.[232] Early suburban developers including Frederick Law Olmsted, Sr. carefully manipulated design elements to give the impression of a seamless integration of the manmade and the natural—though, as in Olmsted's Central Park and other urban projects, not much of the preexisting landscape had actually been left untouched. An identifying feature of the picturesque suburb was its winding roads, which thwarted industry's emphasis on efficiency and economy.[233]

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[230] Wright, *Building the Dream*, 195. The 1920 census showed the suburbs to be growing faster than the urban cores; See also Jackson, *Crabgrass Frontier*, 175.

[231] See Jackson, *Crabgrass Frontier*; Fishman, *Bourgeois Utopias*; John R. Stilgoe, *Borderland: Origins of the American Suburb, 1820-1939* (New Haven: Yale University Press, 1988; Wright, *Building the Dream*.

[232] Fishman, *Bourgeois Utopias*, 5.

[233] Jackson, *Crabgrass Frontier*, 76.

But despite its eschewal of urban form, the pre-World War II suburb remained entirely dependent upon the city. In fact, as Robert Fishman has pointed out, middle- and upper-class suburbs retained a connection to the center city exactly because all of the elements the former excluded—including factories, office buildings, and stores—could be found in the latter.[234] Thus the suburbanization of the United States cannot be considered apart from American urban history, as suburbs and cities remained economically and socially tied until at least the late-twentieth century.

Though other populations did seek out and create suburban communities of their own,[235] until the second half of the twentieth century suburbanization remained primarily a white, upper- and middle-class phenomenon. The exclusion of people of color and lower incomes from the earliest suburbs would eventually heighten the power imbalance between city and suburbs: as more and more wealthy, politically-influential people moved to the urban surrounds, they left behind in the center city a population ill-equipped to pay the city's bills, let alone direct its physical development. Thus federal aid to suburban homeownership translated into financial support for the white and well-off, and a concordant neglect of the nonwhite urban working class.

Some of the ramifications of widespread suburbanization were yet unclear at the time of the WDHP. Nevertheless, the writing was, to some extent, on the cottage walls: those who could, left the city center. Those who could not would wait out the demographic and economic shifts taking place.

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[234] Fishman, *Bourgeois Utopias*, 137.

[235] See Becky M. Nicolaides, *My Blue Heaven: Life and Politics in the Working-Class Suburbs of Los Angeles, 1920-1965* (Chicago: University of Chicago Press, 2002); Andrew Wiese, *Places of Their Own: African American Suburbanization in the Twentieth Century* (Chicago: University of Chicago Press, 2004).

Ford consistently promoted suburbanization as the best solution to the problems associated with center-city congestion. In his contribution to Benjamin Marsh's 1909 *An Introduction to City Planning*, Ford argued that the best location for urban housing was "in all the outlying districts," accompanied by secondary commercial centers to allow for "an independent existence. The streets as far as is consistent with the future development of the city should be irregular and winding, arranged in small plots so as to allow a certain amount of land about each house"—Ford's scheme permitted only single-family houses, not apartments or tenement buildings. The size of the house plots would vary according to the class of the residents, but all residential blocks should have open space for playgrounds at their centers. The particular plan of each subdivision would "[depend] upon the natural topography of the country and every advantage should be taken of this in planning the district."[236]

A 1913 report authored by Ford's brother, Harvard housing expert James Ford, and published under George Ford's name,[237] applied his theory of suburban housing to the particular case of Newark, New Jersey. In its section on "The Housing Problem," the report asked whether tenements or cottages made more desirable dwellings. In tenements, wrote James Ford, "True privacy and solitude, though very important to the growth of the moral individual are difficult to obtain . . . . [I]n general the atmosphere of the tenement or apartment house is one destined to create a race of adults that are unhealthful, puny, and socially, highly artificialized."[238] The suburban cottage, on the other hand, offered plenty of privacy; less dust; more natural sunlight; and an opportunity to educate children through contact with nature. "It is probable, therefore,"

[236] Ford, "The Technical Phases of City Planning."

[237] With E. P. Goodrich.

[238] James Ford, E. P. Goodrich, and George B. Ford, *Housing Report to the City Plan Commission of Newark, N. J.* (Newark: Press of Matthias Plum, 1913), http://books.google.com/books?id=TzcaAAAAYAAJ (accessed September 13, 2012).

James Ford concluded, that at least for families with children, "the suburban home is preferable to the tenement."[239]

The Newark report went on to discuss some methods of promoting suburban housing. These included altering the building codes to make the construction of tenements prohibitively expensive,[240] encouraging architects to experiment with low-cost single- and multiple-family suburban houses,[241] zoning residential areas to disallow conflicting land uses,[242] and lowering the price of suburban land by taxing or otherwise discouraging speculation.[243] More specifically, James Ford suggested that Newark's public works department should discontinue its insistence on standard lot sizes arranged along orthogonal roads. If the main streets of the city's outer residential districts were wide enough, the report proposed, the subdivider could plan for narrow residential streets; "these streets might wind, which would enhance their beauty, and if on a hillside, ought to wind in some accordance with the contour lines of the hill."[244]

Ford diverged from many of his contemporaries[245] in his support for suburbanization, but he nevertheless argued that suburban development should be planned, not allowed to proceed according to the whims of private builders. Ford's preference for the *planned* decentralization for urban housing grew out of his admiration for the German planning model. Indeed, his description of an ideal city plan in his 1909 essay for Marsh's book was a hybrid of City

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[239] Ibid., 56.

[240] Ibid., 68.

[241] Ibid.

[242] Ibid., 59.

[243] Ibid., 65-67.

[244] Ibid., 70.

[245] Most notably Le Corbusier. Fishman, *Bourgeois Utopias*, ix.

Beautiful—which Ford criticized for its focus on aesthetics over "scientific" data-collection[246]—and German ring-road planning. At the center of Ford's city were monumental government buildings circled by broad streets; outside these were the business center, then office buildings, then radial avenues leading in every direction. The radial roads led from the center city to secondary centers, which in turn were connected by a ring road. Outside the ring road Ford located apartment buildings then, beyond, "winding and picturesque streets with irregular blocks and lots for small houses."[247]

In 1910 Ford traveled to Germany for the General Town Planning Exhibition, where he was among the first foreigners to view the entries for a planning competition for greater Berlin. He particularly admired two aspects of the German plans on display: their attention to the traffic problem; and their method of zoning. Traffic was an important consideration for any city because, as Ford wrote, its main question was how to provide residents with the best life for the least money. "All agree that this can be done better in the suburbs than it can in the heart of the city, provided the land for the building of cottage houses can be secured at a reasonable rate, and provided that adequate transit to these points can be provided," Ford argued. The German planners represented at the exhibition had handled the latter admirably, designing a system of radial and circumferential avenues to provide rapid access to the city center from the suburbs, and vice versa.[248]

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[246] Ford has been portrayed as a standard-bearer of the City Practical (see, for example, Scott, *American City Planning Since 1890*, 120-122), but by 1915 he had come to believe that both the City Beautiful and the City Practical were too extreme, and that the best approach to city planning would be a happy medium of the two. See for example, George B. Ford, "The Architectural Side of City Planning," *Architect and Engineer of California* 43, no. 2 (November 1915): 90-92; George B. Ford, "What Makes 'The City Beautiful?'" in *Planning Problems of Town, City and Region: Papers and Discussions at the Twenty-first National Conference on City Planning* (Philadelphia: Wm. F. Fell Co., 1929): 170-8.

[247] Ford, "The Technical Phases of City Planning."

[248] George B. Ford, "City Planning Exhibition in Berlin," *American City* 3 (September 1910): 121-122.

Ford also applauded the zoning system employed by planners in various German cities. As his brother would argue in the 1913 Newark report, Ford saw zoning as an effective means to promote suburbanization. By setting maximum building heights and lot sizes relatively low in outlying districts, city planners could insure that these areas would not be taken over by commercial or other land uses. At the same time, higher limits in the center city would make the construction of housing there unprofitable. Though German zoning was relatively stringent, with every part of the city assigned parameters regarding subdivision and construction, Ford wrote, "The curious part of this zone system is that the property owners do not seem to object to it, and the German cities seem to have comparatively little trouble from complaints of discrimination against individuals. In other words it is simply a matter of getting used to it."[249]

Thus Ford, like many middle- and upper-class Americans of his time, thought suburbanization was the best solution to the problems associated with urban congestion. But this did not mean that Ford neglected the center city. Rather, he saw suburban planning as an essential part of city planning; just as the cities and suburbs were economically dependent, so should their physical development be carefully coordinated. Ford's plans for the WDHP were microcosms of his approach to metropolitan planning more generally, in which housing for the well-off was both *a part of* and kept *apart from* the remainder of the urban environment.

WDHP Planning

Among Ford's subjects during his tenure with the WDHP were two very different posts: Fort Lewis, between Tacoma and Olympia, Washington; and Governors Island, in New York Harbor. Fort Lewis was first laid out only a decade before, as a temporary National Army

[249] Ibid., 122.

cantonment (see chapter 1). Governors Island, on the other hand, had been an Army reservation since 1783, and in 1927 was home to a collection of permanent buildings of varying ages, as well as a number of Great War-era storage buildings. But despite the dissimilarity of their geographical locations, histories of use, and intended future use, Ford's redesign of both posts followed a common pattern. At Fort Lewis and Governors Island, as in many of his other WDHP plans, Ford separated the officers' housing from the rest of the post and applied a different formal model to each area. Ford laid out the administration and operation facilities as well as the enlisted barracks in geometrical and relatively dense arrangements; the "residential section" of the bases, in contrast, comprised low-density housing scattered along curving lanes. Ford's plans for Fort Lewis and Governors Island, in other words, replicated his ideal city on the scale of the Army post.

Ford's plan for Fort Lewis was based on an earlier scheme laid out by Charles H. Alden,[250] an architect and officer in the National Guard Reserve. With an eye to the site's limitations, including the location of World War I-era infrastructure, Alden selected a central portion of the cantonment grounds for development as a permanent post. This area, which had only been partly built-upon during the war, was relatively open to the north but heavily wooded to the south.[251]

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[250] The son of an Army surgeon, Charles H. Alden, III (1867-1951), studied architecture at the Massachusetts Institute of Technology (M.A. 1890). After working with Cram and Wentworth, and Shepley, Rutan and Coolidge in Boston, and Howard and Galloway in San Francisco, Alden opened his own practice in Seattle, in 1909. With Shepley, Rutan and Coolidge Alden took part in the design of Stanford University, in Palo Alto, California; he assisted Howard and Galloway as local manager at the Alaska-Yukon-Pacific Exposition. In 1915 he was head of the architectural department for the Panama-Pacific Fair in San Francisco. Alden was a Fellow of the American Institute of Architects as well as Regional Director of the association's Western Mountain District. He published articles on architecture and city planning, primarily concerning Seattle, and worked on his local city and county planning commissions. Clyde Grainger, "Charles Henry Alden, III, F.A.I.A., 1867-1951," *Journal of the American Institute of Architects* 16 (December 1951): 262-263; Alan Michelson, "Alden, Charles," *Pacific Coast Architecture Database*, https://digital.lib.washington.edu/architect/architects/2541/.

[251] Charles H. Alden to The Commanding General, Fort Lewis, Washington, "Plan of Proposed New Construction," October 14, 1927. War Dept. EI.1-EI.57. GBF. FLL-SC.

Alden located the enlisted men's barracks, which in fact were already under construction, north of Montana Avenue, where C. F. Pilat had sited the First Brigade Infantry's barracks during World War I (see figure 3.1). Across the road to the southwest would be a parade ground, also designated as such during Pilat's time, and, in the woods beyond, officers' quarters. The separation of officers' housing from the barracks, Alden explained, would

> meet the military and social conditions in that the officers will not be living in close proximity to the enlisted men, implying constant surveillance detrimental to their contentment and morale. The welfare and contentment of the officers and their families, it is believed would also be improved by not being in too close proximity to the men while at the same time sufficiently close to make it convenient for the officers to attend to their administrative duties.[252]

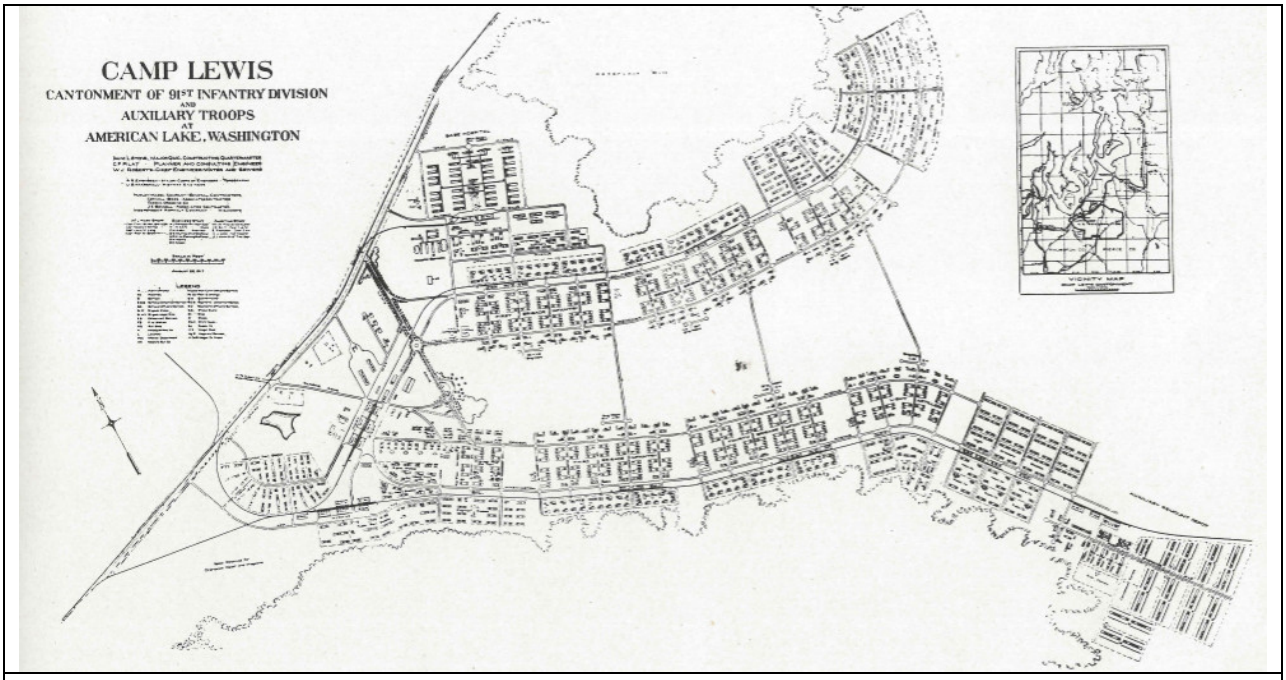

Figure 3.1: C. F. Pilat, Plan of Camp Lewis. Published in *National Army Cantonments: Plans and Photographs, June 1918* (War Department, Construction Division, 1918).

Besides providing some distance from the enlisted men, Alden argued, the wooded location of the officers' houses had independent merits. The area was "admirably suited to

[252] Ibid.

development for residential purposes and would be considered eminently desirable for such use in civil community," he wrote. The site's natural beauty was among its recommendations: "The trees, many of which are of permanent value, offer an attractive setting for the buildings and the proposed roads following the higher contours of the ground add to the attractive setting, forming an interesting and natural development of the problem."[253] For Alden, who was writing to the Commanding General at Fort Lewis, providing officers with "attractive" housing comparable to what might be found outside some civilian city was as important a design consideration as was respecting the hierarchy of command.

Ford took over work on the Fort Lewis plan beginning in November of 1927, at the request of an officer in the Office of the Quartermaster General. That officer asked Ford to review Alden's plan as well as one prepared by the OQMG, and to "make any suggestions that may seem to you to be advisable in regard to the suggested changes, particularly in regard to the general arrangement of the officers' quarters area." Not much else could be adjusted, as the barracks were already being built, and work on the hospital was under contract.[254]

Ford responded with two different layouts drawn three weeks apart. The first, dated December 1, 1927,[255] is uniformly formal. North of the parade ground are three U-shaped roads surrounded by barracks. To the west of these, on a rectangular plot, is the post exchange; west of the post exchange is a triangular plot containing, from north to south, the NCO club, the existing post library, and the headquarters building. North of the post exchange, and entirely isolated from the rest of the base, are six single-family quarters and one apartment building, probably for

[253] Ibid.

[254] William E. Horton to George B. Ford, November 16, 1927. War Dept. EI.1-EI.57. GBF. FLL-SC.

[255] George B. Ford, plan, "Fort Lewis, Wash., War Department," December 1, 1927. Fort Lewis, WA. E. IV Series. GBF. FLL-SC.

non-commissioned officers. The commanding officer's quarters is at the top of the parade ground, surrounded by a traffic circle. West of the circle is the post chapel. South of the chapel and commanding officers' house are, respectively, a large apartment building for bachelor officers, and the officers' clubs.

In his December 1 scheme, Ford arrayed the officers' quarters in columns within rectangular blocks south of the parade ground. Multi-family houses or small apartment buildings form a row fronting the parade ground. South of these are U's of single-family houses, 94 in total. Two of the blocks contain a rectangular open space at their center; the other two have only a vertical service road dividing the two columns of houses; Ford modified the width of the blocks to align them with the barracks blocks across the parade ground. Ford evidently intended the dense woods described by Alden to be cleared, as he indicates a uniform planting scheme—trees planted at even intervals along the edges of each blocks, with clusters of trees marking each corner—for the entire pots.

Ford sent the Quartermaster General a second layout for Fort Lewis[256] (see figure 3.2) on December 21. "I am to say," he wrote General Cheatham, "that I like this scheme much better than the formal arrangement which I sent you ten days ago." In it, he explained, Ford had attempted to "preserve all the best features of Mr. Alden's scheme" in combination with some of the better aspects of his and the OQMG's earlier plans. In contrast to his December 1 scheme, which had assumed—aside from the existing buildings and the barracks under construction—a *tabula rasa*, in his revised plan Ford depicted all of the existing trees; with respect to the wooded

[256] George B. Ford, plan, "Fort Lewis, Wash.," December 21, 1927. Fort Lewis, WA. E. IV Series. GBF. FLL-SC.

area in the south, "I believe it will be possible," he wrote, "with a light shifting of location of houses on the ground, to avoid cutting any tree." [257]

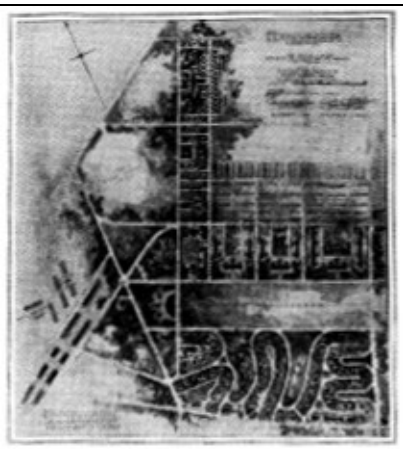

Figure 3.2: George B. Ford, Plan of Fort Lewis. "New Army Posts for Old: A New Design and Layout for Army Posts and Fields," *Quartermaster Review* 9, no. 3 (Nov.-Dec. 1929): 19-22.

Ford altered both the northern and southern segments of the post in his December 21 plan. He rearranged the administrative and club buildings so as to diminish the importance of any single structure: for instance, he moved the NCO club onto the post exchange's plot, and he relocated the chapel from the head of the parade ground to the corner of the triangular block containing the library and the post headquarters building. Ford pushed the commanding officer's quarters back to the plot previously occupied by the chapel, and placed an additional small building to either side of it along a semicircular drive. The three buildings are shown surrounded by preexisting trees, and thus are associated, in terms of landscape, with the officers' quarters to the south, rather than with the more formal building groups to the north.

[257] George B. Ford to Major General B. F. Cheatham, December 21, 1927. War Dept. EI.1-EI.57. GBF. FLL-SC.

In his December 21 plan, Ford abandoned the symmetry between officers' and enlisted housing in favor of an informal arrangement of 78 single-family houses around curved roads. Between the loops of single-family houses Ford reserved two large and several smaller open spaces, as suburban planning principles suggested. Ford made up for the reduction in the number of single-family homes between his first and second plans by doubling the number of multiple-family structures from four to eight. He arranged these along the southern rather than the northern boundary of the wooded area, thus increasing the distance between the post proper and the majority of the officers' residences.

Ford's apparently random arrangement of Fort Lewis's officers' quarters in fact concealed a secret order. That is, as he explained to the Quartermaster General, Ford had split the houses into three groups, each corresponding to a particular regiment and its barracks group across the parade. Thus he had balanced the organizational reality that underlay every Army base with his conviction that the best place for officers to live was away from the regimentation of the rest of the post.

Ford's plan for Governors Island was also based on another architect's design, this one authored by the prestigious firm of McKim, Mead & White. Ford began working as an intermediary between the OQMG and the New York practice in May of 1927. But by June of the same year he had become frustrated enough with McKim, Mead & White's handling of the project that he prepared an alternate scheme for consideration by the Quartermaster General.

The Governors Island project was particularly important to the administrators of the WDHP. The post was significant not just historically but also organizationally, as a regional Army headquarters.[258] In addition, the post was just across the water from Manhattan and thus

[258] Governors Island was made headquarters of the Second Corps Area in 1920, following the National Defense Act reorganization. Marjorie Pearson, ed., *Governors Island Historic District Designation Report* (New York City

highly visible, not just to New Yorkers but to immigrants arriving at neighboring Ellis Island. "It is desired when completed this shall be a 'show post' and that all the buildings and the general layout shall present a neat and artistic appearance," a member of the OQMG explained.[259] As of early 1927, the island was anything but (see figure 3.4). A *New York Times* article from March of that year quoted a visiting congressman as saying: "From what one sees from the water side, [Governors Island] is a dump. The military position here is a permanent one and has been since the first days of the island. The buildings, therefore, should be permanent stone structures instead of wooden shacks."[260]

Landmarks Preservation Commission, 1996), 18, http://www.nyc.gov/html/lpc/downloads/pdf/reports/GOVERNORS_ISLAND_-_HISTORIC_DISTRICT.pdf (accessed September 13, 2012).

[259] W. R. Gibson to Quartermaster, 2d Corps Area, Governors Island, New York, "Supply and utility layout for Governors Island," October 20, 1927. War Dept. EI.1-EI.57. GBF. FLL-SC.

[260] Article (*New York Times*, March 6, 1927) quoted in National Park Service History Program, Northeast Region, *Governors Island National Monument, New York, New York: Historic Resource Study* (National Park Service, 2007), 196. http://www.nps.gov/history/history/online_books/gois/gois_hrs.pdf (accessed September 20, 2012).

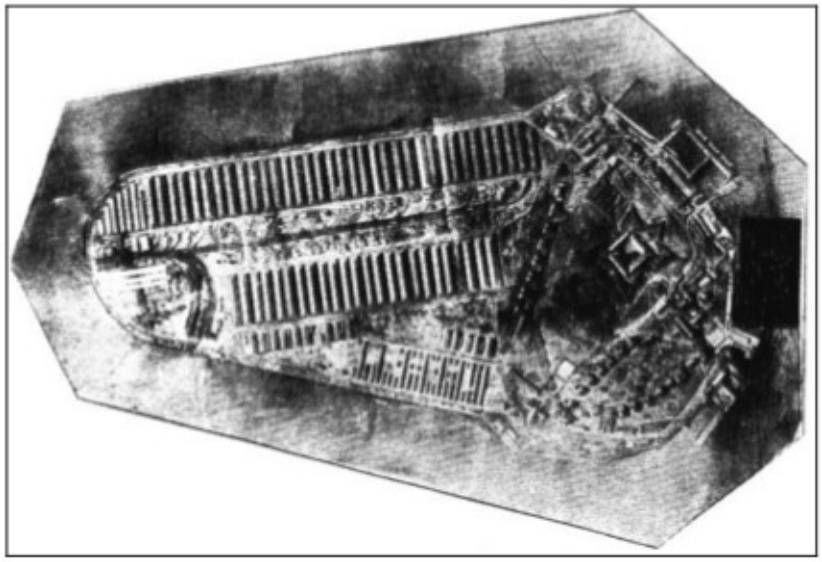

Figure 3.3: Governors Island during World War I. Published in National Park Service History Program, Northeast Region, "Governors Island National Monument, New York, New York: Historic Resource Study,"
http://www.nps.gov/history/history/online_books/gois/gois_hrs.pdf

Given the Quartermaster Corps's concern for the aesthetics of the post, McKim, Mead & White was a logical choice for the job. During the Gilded Age, the firm had become "synonymous with bringing American buildings to a level of design equal to that of contemporary Europe," writes historian Mosette Broderick.[261] Though the original partners also designed residences, the practice was best known for its institutional and civic buildings and monuments, including the Washington Arch in Washington Square Park (1892); the campuses of Columbia University (1893-1900) and New York University (1891-1900); the Boston Public Library (1895); Pennsylvania Station (1910); the main building of the American Academy in

[261] Mosette Broderick, *Triumvirate: McKim, Mead & White, Art, Architecture, Scandal, and Class in America's Gilded Age* (New York: Alfred A. Knopf, 2010), xxii.

Rome (1914); and the Harvard Business School (1925). McKim, Mead & White also had a few Army connections: the firm had designed the Army War College's central building, Roosevelt Hall (1903-1907). And Lt. Col. Francis B. Wheaton, who headed the Quartermaster General's architectural staff during the WDHP, had worked for the practice before accepting a commission with the Army.[262]

McKim, Mead & White submitted a tentative layout for Governors Island during the spring of 1927. Lawrence Grant White, founding partner Stanford White's son, recorded the criticisms of a number of War Department representatives at a May 3 meeting. Among the Army officials' objections was to McKim, Mead & White's assignment of officers to single-family houses. "This is a City problem not comparable to the traditional frontier posts," White wrote, for which apartment buildings would be most appropriate.[263]

A few weeks later, McKim, Mead & White sent Ford a revised scheme for Governors Island, asking for his comments. Ford either had not heard or had ignored the consensus of the May 3 Army group against single-family officers' houses. He suggested that the New York firm should split the officers' apartments into a group of smaller buildings facing Buttermilk Channel. A similar treatment could apply to the nurses' quarters.[264]

The architects at McKim, Mead & White continued to develop their layout for Governors Island over the following months. Among firm's drawings retained by Ford is a plan labeled

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[262] Fine and Remington, *The Corps of Engineers*, 48.

[263] L. G. White, "Re: Governors Island, Memorandum of Conference Held at the Office of the Secretary of War, Washington, D.C., 2:30 P.M., Tuesday, May Third, 1927," 1. War Dept. EI.1-EI.57. GBF. FLL-SC.

[264] McKim, Mead & White to George B. Ford, Esq., "Governors Island," May 26, 1927. War Dept. EI.1-EI.57. GBF. FLL-SC; See also McKim, Mead & White to George B. Ford, Esq., "Governors Island," May 20, 1927. War Dept. EI.1-EI.57. GBF. FLL-SC; L. G. White, "Memorandum," June 2, 1927. War Dept. EI.1-EI.57. GBF. FLL-SC.

"Scheme B," dated July 1, 1927.[265] The plan reserves the southwestern portion of the island as a large parade ground or park, per Army officials' request. The centerpiece of the built-up area in the north is a massive U-shaped barracks and drill hall, which faces both the parade ground and the old Fort Jay. To the northwest of the barracks building are a small building for non-commissioned officers and the hospital, which is I-shaped in plan. To the southeast are another NCO quarters and the YMCA building.

McKim, Meade & White arranged the remaining quarters along the long edges of the semi-oval leading from the barracks building to the water side of Fort Jay and back again. To the north are a small quarters for the post nurses, a larger NCO apartment building, and—mirroring the nurses' home—the post school. To the southeast are two U-shaped officers' apartments buildings. Beyond the apartments, to the far side of the post chapel and the officers club, is a V of six officers' quarters, probably multi-family building, plus the hostess house.

McKim, Mead & White's Scheme B is unsurprising, given both the War Department's preference for a monumental urban scheme, and the firm's reputation as a bastion of Beaux-Arts architecture and planning. The post buildings are widely spaced and as symmetrical as possible in arrangement; they are connected by perpendicular, diagonal, or semi-circular roads; the major intersections are marked with traffic circles; and the widest roads are pictured as tree-lined boulevards. Even the sidewalks in front of the officers' apartment buildings echo the geometry of the plan of as a whole, with two perpendicular paths meeting at a circle. The Army had asked for a "show post"; McKim, Mead & White delivered.[266]

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[265] The George B. Ford Collection at Frances Loeb Library, Harvard University, also contains an aerial perspective drawing of the entire island, and a perspective showing the façade of the main barracks/drill hall building, both by McKim, Mead & White. See folder Governors Island, NY. E. IV Series. GBF. FLL-SC.

[266] McKim, Mead & White, "Governors Island, New York Harbor, Plot Plan, Scheme 'B,'" July 1, 1927. Governors Island, NY. E. IV Series. GBF. FLL-SC.

Ford's September 1927 plan for Governors Island was similar to McKim, Mead & White's with one important exception: his treatment of the officers' quarters. Like in McKim, Mead & White's plan, Ford situated the combination barracks and drill hall near the geographical center of the island. He preserved much of the New York firm's circulation pattern, and rendered the area to either side of Fort Jay even more symmetrical by breaking up the officers' apartment buildings into multiple smaller structures and arranging them to mirror the buildings on the island's opposite side. The majority of Ford's plan, therefore, was as tied to the City Beautiful tradition as was McKim, Mead & White's.

Ford gave the officers' houses at the southeast corner of the island an entirely different treatment. Again flouting Army officials' wish for consolidation, Ford broke McKim, Mead & White's multi-family houses into smaller structures, and pushed these to the very edge of the island—as far away from the central monumental group as possible. A series of picturesquely curving roads weave the houses together. The area is also marked by informal clusters of trees, either existing or intended for planting, in contrast to the regimented rows of trees along the island's boulevard. Even the existing Gothic chapel, midway between the officers' houses and the apartment buildings, is treated informally: Ford arranged the roads around it so that the church sits off-center of its circular plot.[267]

In his plan for Governors Island, Ford thus incorporated the WDHP leadership's desire for a monumental, city-like post only as far as the operational and administrative buildings, and some of the housing. "Home" for the island's officer families, on the other hand, would be a different space, both physically separate from the rest of the post and planned in an informal

[267] George B. Ford, "Governors Island, New York, Layout Made for the War Department," September 1927. Governors Island, NY. E. IV Series. GBF. FLL-SC.

style opposed to the centralized, symmetrical order of the remainder of the base. The Army officials had asked for apartment buildings; Ford gave them cottages in a park.

General Hanson Ely, a career officer and commander of the Second Corps Area headquartered at Governors Island, submitted a third plan for the post in December 1927. The layout was accompanied by a letter from island Quartermaster Clyffard Game critiquing the McKim, Mead & White scheme. Game argued that the New York practice's scheme was flawed both practically and aesthetically. With respect to officers' housing specifically, he recommended that the U-shaped apartments be relocated to the northwestern tip of the island, near Castle William, whose "historic interest" the architects at McKim, Mead & White had failed to consider when they proposed using it for fuel storage. "The general view from the apartments, as located in [McKim, Mead & White's] plan, is of the unsightly Brooklyn shore line and the construction of apartments in this location is considered very inadvisable." The Castle William area, on the other hand, fronted a "most impressive" view of lower Manhattan.[268]

Unlike McKim, Mead & White's and Ford's plans, Ely's layout was decentralized, with all of the buildings located around the island's perimeter, and the area around Fort Jay—the monumental front yard of the barracks building in the other two designs—dedicated for use as a golf course. The barracks and drill hall building, while as large as in Ford's and McKim, Mead & White's plans, is reduced in importance by its location along the southeastern edge of the island.[269]

Ford and McKim, Mead & White panned Ely's layout for Governors Island. "[F]rom the glance I had to Gen. Ely's scheme," Ford wrote the Quartermaster General, "I got the impression

[268] Clyffard Game to the Quartermaster General, December 14, 1927. War Dept. EI.1-EI.57. GBF. FLL-SC.

[269] Office of the Quartermaster, 2nd C. A., Governors Island, N. Y., "Plot Plan," December 8, 1927. Governors Island, NY. E. IV Series. GBF. FLL-SC.

that the buildings did not arrange or group at all; that they would look like so many buildings sifted out of a shaker."[270] A representative of McKim, Mead & White, meanwhile, defended the firm's location of the officers' apartments on the Brooklyn side of the island on the grounds that they had done so "with the approval of the Secretary of War, the Chief of Staff, who has an intimate acquaintance with the living conditions on the Island, and yourself."[271]

McKim, Mead & White's plan to house the officers in apartments rather than in a picturesque development of single-family homes eventually held sway. (In fact, not much of either plan was implemented, while many of the island's older structures, slated for demolition in the WDHP schemes, were preserved.)[272] Building number 12, a four-story apartment building meant to house all of the island's officers, went up in 1931 according to plans developed by McKim, Mead & White.[273] Ford, however, refused to acknowledge defeat. In a 1929 article published in the *Quartermaster Review*, he admitted that Governors Island "presented an entirely different sort of problem" than did the Army's larger posts. "Here it is a question of housing a large population on a small island and doing it in a way that will leave as much of the island open as possible." Thus the Army officers stationed at the post would be housed in large apartments—but Ford characterized these not as monumental urban structures, but as "large garden apartments of a New York *suburban* type."[274]

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[270] George B. Ford to Major General B. F. Cheatham, February 9, 1928. War Dept. EI.1-EI.57. GBF. FLL-SC.

[271] L. G. W[hite] to Major General B. F. Cheatham, January 11, 1928. War Dept. EI.1-EI.57. GBF. FLL-SC.

[272] See Pearson, ed., "Governors Island Historic District Designation Report."

[273] Pearson, ed., "Governors Island Historic District Designation Report," 70.

[274] George B. Ford, "New Army Posts for Old: A New Design and Layout for Army Posts and Fields," *Quartermaster Review* 9, no. 3 (Nov.-Dec. 1929): 22 (emphasis mine).

Fort Lewis and Governors Island were not the only Army posts at which Ford planned the suburbanization of officers' housing. He used a similar technique at a number of other locations. At Fort Sam Houston, for instance, Ford entered a debate about how condensed the permanent post should be, given the high cost of excavation in the San Antonio area. A board of officers reviewing another designer's plan for the post argued "that such a compact arrangement of existing and projected construction can be achieved only by adopting frankly a city scheme for the arrangement of buildings and placing all the new construction in the many vacant spaces."[275] Yet in his plans for the post, Ford insisted on leaving the historic cavalry post parade ground open, thus providing a buffer of green space between the NCO and officers' housing and the rest of the base.[276]

At Fort Benning, meanwhile, Ford had the opposite problem. In Georgia he struggled to bring order to a post that, in his words "just grew, like Topsy," without any comprehensive plan. He did, however, eventually reshape the OQMG's linear scheme into a tightly geometrical, centralized layout for the post center. The officers' quarters, however, were exempt from Ford's consolidation: these Ford, like the OQMG before him, "scattered on the hillcrests" along curving roads.[277]

Ford most clearly articulated his vision for the twentieth-century Army post in his discussion of Mitchell Field (Long Island; see figure 3.4), included in his *Quartermaster Review* article on the WDHP. Ford imagined that he had so improved the disposition of the airfield's

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[275] "Proceedings of a Board of Officers convened by paragraph 3, Special Order no. 246, Headquarters Second Division & Fort Sam Houston, Texas," November 6-8, 1926, 3. War Dept. EI.1-EI.57. GBF. FLL-SC.

[276] George B. Ford, "Fort Sam Houston, San Antonio, Texas," January 1927. Fort Sam Houston, TX. E. IV Series. GBF. FLL-SC.; George B. Ford, "Fort Sam Houston, San Antonio, Texas, Revised Plan," March 1927. Fort Sam Houston, TX. E. IV Series. GBF. FLL-SC.

[277] Ford, "New Army Posts for Old," 21; George B. Ford, "Restudy for New Construction, Fort Benning, Georgia," August 26, 1929. Fort Benning, GA. E. IV Series. GBF. FLL-SC.

housing that the officers' quarters might be mistaken for a civilian suburban development. "According to the accepted new layout," he wrote, "all of the officers' quarters are arranged in what appears, from the air, to be a charming subdivision adjoining the Meadow Brook Hunt Club." The officers' single-family homes were widely-spaced with large yards, making for "plenty of privacy." "The post itself will have all the charm that the best modern subdivisions have," Ford wrote. He concluded:

> What is true of Mitchel Field is true, to a greater or less degree, of all the schemes of development for the various Army posts. One and all they are being made more livable and more pleasing to the eye, actually more comfortable and a far better place to bring up children in—all without any sacrifice in efficiency.[278]

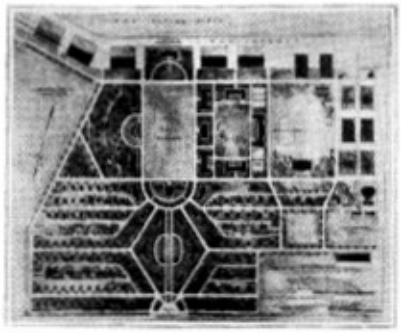

Figure 3.4: George B. Ford, Plan of Mitchell Field. Published in "New Army Posts for Old."

Ford, as a collaborator with the Quartermaster Corps on the WDHP, had a significant say in what shape the renovated Army posts would take. As such, his vision of the ideal post, which in turn was based on his vision of the ideal city, was of more than theoretical import. By relocating officers' quarters to the Army post's periphery, Ford elevated a growing trend in private development—the suburbanization of middle- and upper-class housing—to a federally-sanctioned planning principle.

[278] Ford, "New Army Posts for Old," 20.

WDHP Architecture

The officials in charge of the WDHP used architecture as well as planning to redefine the Army's popular image. Two aspects of the WDHP architectural program are particularly significant in this regard. First, the WDHP opted to build single- rather than multiple-family houses for commissioned officers. Army officials thereby offered prospective officers the chance to serve in the military *without* giving up the amenities associated with civilian life in the suburbs. Second, the architects of the WDHP united the new quarters stylistically. The application of two prevalent residential styles—the neo-Georgian or Colonial style in the northeast, and the Spanish Mission style in the southwest—to military housing encouraged a perception of the Army as a specifically American institution. At the same time, the WDHP leadership argued that these two architectural styles accommodated much local variation, and thus confirmed an understanding of the United States Army as an institution that prized individuality as much as it did uniformity.

As it had for the planning side of the WDHP program, the Quartermaster Corps hired a civilian architect as an adviser to the military architectural staff. The man selected was Alfred Loomis Harmon, who worked for McKim, Mead & White and Wallas & Goodwillie before opening his own practice. Around the time of the WDHP, Harmon also worked for the American Battle Monuments Commission, for which he designed the Services of Supply Memorial at Tours (1928-1932), and monuments at Somme-Py (1927-1932) and Cantigny (1927-1932).[279]

[279] For more on Harmon's tenure with the ABMC, see Elizabeth G. Grossman, "Architecture for a Public Client: The Monuments and Chapels of the American Battle Monuments Commission," *Journal of the Society of Architectural Historians* 43, no. 2 (May 1984): 119-143.

Harmon's involvement with the WDHP had a different character than did Ford's. He rarely traveled to Washington,[280] and he seems only to have sketched redesigns of buildings in unusual cases. Many of his written comments concerned relatively minor details, such as the length of a railing[281] or the depth of a linen closet.[282] Yet his engagement with the program was fairly comprehensive, with the Quartermaster General requesting that all new plans for officers' quarters pass through Harmon's review.[283] Thus it is difficult to determine, without a painstaking reconstruction of the archived correspondence, exactly which aspects of the WDHP designs Harmon was responsible for, and which were the work of the OQMG.

Harmon understood his job, in part, as the lending of legitimacy to the WDHP's architectural aspirations. Writing to request a review of interior and exterior paint schemes, Harmon explained, "for your own protection in case of any future criticism."[284] To a certain extent *any* civilian architect could have played this role. Yet Harmon's background in housing design also recommended him for work with the War Department.

Harmon's most famous pre-WDHP commission was for the Shelton Hotel (1924), an apartment hotel for which he received gold medals from the New York chapter of the American Institute of Architects and the Architectural League of New York. Like the six smaller Allerton

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[280] A. L. Harmon to Colonel William E. Horton, June 23, 1927. 600.1 (1929)—Miscellaneous. GCSF, 1922-1935. RG 92. NACP.

[281] Nurse to Chief, Engineering Division, "Mr. Harmon's Criticisms," May 26, 1928, 2. 600.1 (1929)—Miscellaneous. GCSF, 1922-1935. RG 92. NACP.

[282] A. L. Harmon to Major General B. F. Cheatham, April 19, 1928, 4. 600.1 (1929)—Miscellaneous. GCSF, 1922-1935. RG 92. NACP.

[283] Horton to Engineering Division, November 3, 1928. 600.1 (1929)—Miscellaneous. GCSF, 1922-1935. RG 92. NACP.

[284] A. L. Harmon to Major General B. F. Cheatham, April 18, 1928, 3. 600.1 (1929)—Miscellaneous. GCSF, 1922-1935. RG 92. NACP.

apartment buildings Harmon designed between 1916 and 1924,[285] the thirty-five-story Shelton featured architectural devices meant to conceal its status as a multiple dwelling. For example, Harmon's design, according to one write-up, "attempt[ed] to eliminate the public atmosphere of the typical first-floor hotel lobby" by situating the building's recreational areas on the second floor and above.[286]

Harmon's designs for apartment hotels were both similar to and much more radical than the Army-post buildings of the WDHP. On the one hand, both projects involved the use of architecture to domesticize spaces that had the potential to challenge traditional ideas about the home: in the case of the Shelton Hotel, urban accommodations for single men; in the case of the WDHP, buildings for single soldiers and families both built and owned by the federal government. On the other hand, much of Harmon's work for the WDHP comprised the review of plans and elevations for officers' houses, which were much more traditional, socially and spatially, than apartment hotels or even barracks buildings.

A 1926 *New York Times* article on the WDHP anticipated that officers' wives "particularly will welcome the prospect of having homes in which they can entertain without making apologies."[287] For the WDHP leadership, this meant building single-family houses rather than apartments or multiple-family homes. The assignment of commissioned officers to stand-alone houses may have begun before the 1920s, but it was codified in the WDHP. Only the lack of adequate ground area would lead to multiple-unit general officers' quarters, Wheaton explained in the *Quartermaster Review*. Otherwise, officers and their families would live in one-

[285] "Allerton House: Arthur Loomis Harmon, Architect," *American Architect* 115, no. 2267 (June 4, 1919): 773-774, http://books.google.com/books?id=vM8xAQAAMAAJ (accessed October 16, 2012).

[286] Edwin Warren Hoak and Willis Humphrey Church, "The Shelton Hotel," in *Masterpieces of American Architecture* (1930; repr., Mineola, NY: Dover Publications, 2002), 153.

[287] "Modern Army Posts," *New York Times,* March 15, 1926.

or two-story single-family houses with a living room, dining room, kitchen, pantry, three bedrooms, two bathrooms, a maid's room, and a maid's bathroom. In those few cases where space required duplexes, Wheaton wrote, each family would have their own entrance and porch. Four-unit houses would only be built at the various Army schools. The smaller size of these homes could be excused "as they are for the use of student officers whose tours of duty are relatively short."[288]

Under the WDHP, the number of housing units in a single structure was inversely proportional to the rank of its inhabitants. While general officers lived in stand-alone houses except in rare cases, married non-commissioned officers, field officers, and company officers were relegated to duplex or other multi-family houses. Enlisted personnel, of course, lived in dormitory-style barracks. Thus the WDHP defined the detached house as the most desirable accommodations type. That single-family houses might have been favored by most officers' families regardless of the Army's method of assignment matters less than that the WDHP officially equated the freestanding house with its own yard and gardens with the top of the military hierarchy.

The watchword of the WDHP's architectural program was style. After considering a building's function, Wheaton explained, the architect's second thought was of style. This was a modern problem: historically, builders were limited to what they knew—typically the single style of their birth region. But in the twentieth century, Wheaton explained, architects traveled, information about architecture traveled, and styles could travel, too. Echoing German architect Heinrich Hübsch's argument in his seminal book, *In What Style Should We Build* (1828),

[288] Francis B. Wheaton, "The Architecture of the Army Post," *Quartermaster Review* 8, no. 2 (September-October 1928): 11.

Wheaton warned against the adoption of modish architectural designs. Instead, buildings should be designed in styles whose meaning would be deep and lasting.

The architectural style of a national building program like the WDHP, Wheaton wrote, "should be one that has acquired some degree of national character and that has become familiar to and is understood by a majority of the people." Thus the WDHP's administrators had selected two styles for its new buildings: the neo-Georgian, or Colonial style; and the Spanish Mission style. Both styles, Wheaton explained:

> were brought over by the original founders of the settlements in those respective sections, and while they maintain a major popularity in their original zones, they have spread throughout the central and western states until they have covered the land. They have long since ceased to be importations and have become national growths and are recognized as such in the civilized world.[289]

Thus the architecture of the building program would be uniquely and recognizably American. The unnamed bogeyman of the 1920 National Defense Act was the European standing army, which opponents of Emory Upton's push for a large, centralized, professional military associated with the non-democratic regimes of Germany and other states. Under the 1920 Act, the American army was to be a distinct product, a decentralized, size-limited force of citizen-soldiers. Redesigned in the Colonial and Spanish Mission styles (see figure 3.5 and 3.6), the United States's Army posts would visually communicate their Americanness, assuaging fears that the very existence of the Regular Army presented a threat to democracy.

[289] Ibid., 12.

Figure 3.5: WDHP-era Officers' Housing, Ft. Knox, Kentucky. Published in R. Christopher Goodwin and Associates, Inc., *National Historic Context for Department of Defense Installations, 1790-1940* (Baltimore, MD: U.S. Army Corps of Engineers, 1995), 1:79.

Figure 3.6: WDHP-era Noncommissioned Officers' Housing, Ft. Benning, Georgia. Published in R. Christopher Goodwin and Associates, Inc., *National Historic Context for Department of Defense Installations,* 1:209.

But while the WDHP would unite the nation's Army posts architecturally, Wheaton argued, variations within the styles would tie particular posts to the regions in which they were located. WDHP architects took pains to identify the buildings of each post with local landmarks. Of the Spanish Mission posts, for instance, Fort Sam Houston's architecture paid homage to the Alamo as well as to San Antonio's other missions: the Mission Concepción; Mission San José; and Mission San Francisco de la Espada. Similarly, the architecture at March Field and Rockwell Field in California was based on the missions along California's Camino Real, among

them Mission San Juan Capistrano and Mission San Luis Rey de Francia.[290] In the Colonial section of the country, the housing at Fort Devens would "at once suggest to the trained eye the influence of the older buildings in the yard at Harvard" University. The barracks at Fort Meade, in Maryland, were modeled on Doughoregan Manor in nearby Ellicott City.[291] Thus the architecture of the WDHP, in its regional variability, would suggest to civilians and soldiers alike that the Army was as much a local as a national institution.

At the same time, Wheaton insisted, the architectural variety of the WDHP affirmed the value of individualism over (European) collectivism. The Army's new housing thereby refuted another criticism of the Regular Army, that its emphasis on uniformity was anathema to individual freedom. Reflecting a popular conception of America's founders as refugees from tyranny, Wheaton wrote of the Colonial style: "When we review this field we find that the various colonists who started the first settlements, individualists to begin with, rapidly developed a more or less individual architecture suited to the particular climate and mode of life in each class." By class, Wheaton meant economic class; for an essential tenet of American individualism was that different people achieved different stations in life, depending on effort and ability. The regional distribution of wealth was reflected in regional architectural variations, in "the simple but refined details of New England, the so-called Dutch Colonial of New York and its vicinity, and the more opulent type found further south in Maryland, Virginia, the Carolinas, and Georgia."[292] The architecture of the WDHP, according to Wheaton, would communicate the Army's compatibility with an individualist ethos and even class difference.

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[290] Ibid.

[291] Ibid., 13.

[292] Ibid.

Finally, the choice of the Spanish Mission and Colonial styles had contemporary significance, as these were architectural styles favored by suburban developers. According to the *Army and Navy Journal*,

> It is proposed to construct types of buildings at the army posts in the various sections of the country that will be similar in architecture to those prevailing in the community . . . . The prevailing commercial designs for homes in the South, for example, would be followed and the Southern posts present attractive suburban sections, with inviting homes for the people of the army. Buildings in the North and West would resemble the suburban homes in those sections.[293]

For example, McCook Aviation Field in Ohio, wrote a *New York Times* editorialist, would be renovated "with a view to making this air post a suburb in keeping with modern Dayton."[294]

On the one hand, the Colonial and Spanish Mission styles served a similar purpose for both suburban developers and Army officials: by their historical associations, they lent legitimacy to communities that might be criticized as overly commercial (new suburban developments) or not commercial enough (Army posts). At the same time, adapting the WDHP architectural program to meet commercial building trends allowed the Army to ride the wave of suburban growth, and to argue that life in the Army was not that different from life outside it, after all.

The leadership of the WDHP, including civilian consultant Alfred Loomis Harmon, used architecture to reshape the twentieth-century Army post, both physically and in the minds of the American public. The architecture of the WDHP was meant to hold several meanings. First, the use of the Colonial and Spanish Mission styles signaled to soldiers and civilians that the United States Army was a homegrown institution, not a European import. Local variations on these

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[293] *Army and Navy Journal* article quoted in "Modern Army Posts," *New York Times,* March 15, 1926.

[294] "Modern Army Posts," *New York Times,* March 15, 1926.

styles, moreover, indicated an Army post's connection to its particular locale, as well as the importance of individuality within the institution as a whole.

But the architecture of the WDHP also transmitted an unintended message about the trajectory of American urban growth. The program's preference for single-family houses for officers was a reflection of popular sentiment, but it also helped to formalize a hierarchy of housing types. Similarly, the styles chosen by WDHP architects did not just have historical and political significance; they also tied the renovated Army posts to contemporary suburban developments. Thus the Army sanctioned the suburbanization of the United States's built environment, nearly a decade before any other federal program would do so.

Federal Support for Suburbanization

The suburbanization of the Army, as an agent of the federal government, had implications outside the institution itself. The WDHP prefigured, even if it did not directly inform, the support of middle-class suburbanization by various government programs in the years beginning with FDR's presidency. These programs would have powerful, if not always intended, consequences for the built environment of the United States as well as for American society more generally.

The story of federal support for suburbanization, and a concordant neglect of the American inner city, has been told by a number of historians, including Kenneth T. Jackson and Gwendolyn Wright. The intervention of the federal government into urban and suburban housing markets had opposite effects. During the New Deal, the Public Works Agency (PWA) built low-rent urban public housing for the "deserving poor."[295] Several years later, the 1937

[295] Jackson, *Crabgrass Frontier*, 222; Wright, *Building the Dream*, 223-6.

Housing Act established the United States Housing Agency (USHA), empowering it to finance local housing agencies. The public housing paid for by the USHA was almost entirely concentrated in the cities, for two reasons. First, the formation of a local housing agency was voluntary, and thus a commitment an area without a substantial low-income population was unlikely to make. Second, local agencies were required to undertake slum clearance in tandem with new construction; this meant only places with existing slum conditions could build USHA public housing.[296] The result of the USHA's reliance on local housing agencies, in other words, ensured that low-income populations remained in the center city, even if the quality of their housing improved.[297]

As public housing policy shifted its focus, after the New Deal, from the working poor to the very poor, residents of government-funded projects entered a vicious cycle of worsening environmental conditions and increased social stigma. Over the course of the 1940s and 1950s, architectural standards for housing projects dipped and racial tensions rose, and more and more observers turned their backs on the center city, now seen as a locus of violence and poverty.[298]

But there was another side to the federal housing coin. As Robert O. Self points out in his book on race and space in Oakland, the story of American suburbanization is as much about the forces driving upper- and middle-class whites *to* the suburbs as it is about the forces driving them *from* the inner cities.[299] Federal support for suburban housing construction began as early as did the construction of urban public housing. Rex Tugwell's Greenbelt Town Program, for

[296] Jackson, *Crabgrass Frontier*, 225-6.

[297] Wright, *Building the Dream*, 227.

[298] Ibid., 218.

[299] Robert O. Self, *American Babylon: Race and the Struggle for Postwar Oakland* (Princeton, NJ: Princeton University Press, 2003), 2.

instance, "was explicitly intended to foster deconcentration," Jackson writes. Tugwell himself explained, "My idea was to go just outside centers of population, pick up cheap land, build a whole community, and entice people into them. Then go back into the cities and tear down whole slums and make parks of them."[300]

The Greenbelt Town Program was unusual in that involved the federal government both funding and building extra-urban communities. More typical was support for private suburban housing construction. One of the New Deal programs to have a long-term impact on housing distribution was the Home Owners Loan Corporation (HOLC; 1933), which refinanced existing mortgages. To aid lenders, HOLC also established a standardized appraisal system that privileged new, deconcentrated, and homogeneous developments over aging, dense, mixed-race areas.[301]

HOLC's appraisal system was put to discriminatory use by the Federal Housing Administration (FHA; 1934), which insured private lenders and thereby reduced the minimum down payment and extended the payment period for first-time mortgages. Because the FHA used HOLC-type appraisals to value property, the majority of FHA insurance went to new suburban housing tracts. The FHA, moreover, established housing standards that "effectively eliminated whole categories of dwellings . . . from eligibility for loan guarantees" by denying assistance in cases where a minimum setback or lot size had not been met.[302]

As Jackson points out, federal policy did not make or break the suburbanization of the United States. Much of the impetus to suburbanization was cultural, coming from below rather

[300] Jackson, *Crabgrass Frontier*, 195.

[301] Ibid., 197-203.

[302] Ibid., 208; Wright, *Building the Dream*, 246-8.

than from above. Yet the federal government's housing programs "put its seal of approval," in Jackson's words, on the middle-class exodus from the inner city and the race- and class-based discrimination that went with it.[303] That the government did not manufacture but rather encouraged an existing trend does not absolve it of responsibility for the consequences.

Conclusion

Between 1926 and the start of World War II, the United States Army renovated many of its stateside posts under the War Department Housing Program (WDHP). The program's leadership believed that improved living conditions would improve morale and therefore raise rates of recruitment and retention, an important consideration in an all-volunteer Army. A *New York Times* editorial introducing the WDHP explained:

> In the past there has been a sameness, which made for neither the attractive nor the useful, in quarters, barracks, administration buildings, hospitals and post exchanges. It is now doubted whether the standard designs were economical in the long run. Certainly the army was not proud of them, and the psychological effect of the monotony and bareness of the architecture, in which art was lacking, did not contribute to efficiency . . . . Give the army commodious and handsome quarters, well ventilated and comfortable hospitals, clean and airy post exchanges, and administration buildings that impart character to a post, and from General to private, the garrison will take a greater pride in the service and be smarter on parade.[304]

The WDHP had both planning and architectural components. The key figure on the planning side of the program was George Ford, a leader of the contemporary city-planning movement. Ford argued that it was time for the Army to move away from purely functional design. "[I]t has been a well-known tradition of the Army in the past that whereas Army buildings and layouts must be practical, nevertheless they should look military," Ford wrote.

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[303] Jackson, *Crabgrass Frontier*, 217.

[304] "Modern Army Posts," *New York Times,* March 15, 1926.

"There seemed to be a feeling that any building or layout that was not foursquare and austere was effeminate and unworthy of the Army." At Fort Wadsworth, for example, the barracks were arranged "in monotonous rows close together, with little privacy, and with no outlook or setting, utterly unattractive."[305]

Ford's typical post plan was characterized by two different approaches to urban form. First, Ford arranged the administration and operation buildings as well as the barracks into compact geometrical designs. The section of the post devoted to officers' housing, on the other hand, he tended to organize according to suburban planning principles, with informal groups of single-family homes spread along curving roads and culs-de-sac. Ford's divergent approach to the administrative and residential sections of the Army post is clearest in cases where he was asked to modify another planner's design, as at Fort Lewis and Governors Island.

Ford's preference for locating officers' housing on the periphery of the Army post was directly related to his experience in civilian city planning. Ford, like many of his contemporaries—both design professionals and laypeople—believed that the best way to relieve inner-city congestion was to remove housing from the city center to the suburban surrounds. Ford believed that by modeling Army housing on suburban subdivisions he could raise the quality of life for officers and their families, in accordance with WDHP directives.

The architectural side of the WDHP, meanwhile, revolved around two questions: what *type* of housing to build, and what *style* to build it in. Army officials, in consultation with architect Alfred Loomis Harmon, elected to house officers in single-family homes designed in one of two styles, Colonial or Spanish Mission. The choice of single- over multi-family houses was largely a reflection of a growing middle-class preference for the same. The leadership of the

[305] Ford, "New Army Posts for Old," 19.

WDHP chose the two styles it did in order to identify the modern Army as a non-threat to American democratic values, and to bring Army housing in line with popular taste in domestic architecture.

Both the planning and architectural aspects of the WDHP privileged suburban over urban living. Again, this was in part a ploy to attract middle-class men to a career in the Army. But the WDHP had the full weight of the federal government behind it, and thus had the potential to *create* public opinion even as it reflected it. Later government agencies including the HOLC and the FHA would endorse suburban living even more explicitly, with profound effects on the United States's built environment.

The Army, as a federally-controlled institution, was largely insulated from these effects. Military posts did not suffer the kind of physical and economic decay that many of America's inner cities did. But this does not mean that Army planners did not turn their backs on the urban model. To the contrary, more and more of the postwar Army post would be suburban in character, again both reflecting and helping to create a popular revolt against the city.

Chapter 4: How Best to Build: Army Experiments in Prefabrication

Introduction

Between the Great Depression and World War II, "prefabrication" was a much-used term in architecture and construction circles. During that period, dozens of new of companies and products emerged, each promising to apply factory production techniques to housing. The very quantity and diversity of approaches to factory-fabrication, most of which were untested on any scale, made it difficult to define prefabrication, let alone assess its potential to revolutionize the house-building industry. "Throughout the last decade," Douglas Haskell wrote in the June 1943 edition of *Architectural Record,* "there has been more disturbance to mental peace from prefabricated notions about prefabrication than from any development that has taken place in the field, where man meets mortar."[306] The editors of *Architectural Forum* began their 1942-3 series on prefabrication on a similar note: "Prefabrication is all things to all men, and a source of confusion to many."[307]

The Army was not immune to either the enthusiasm or the skepticism surrounding prefabrication. During the years immediately preceding the Second World War, the Quartermaster Corps studied a number of different prefabrication systems in order to assess their usefulness to Army projects, both for permanent and temporary (emergency) construction. In the

[306] Douglas Haskell, "Prefabrication: Assembly Lines Reach Out for New Markets," *Architectural Record* 93 (June 1943): 62.

[307] "The Prefabricated House: A Movement Emerges," *Architectural Forum* 77 (December 1942): 50.

context of permanent Army construction, Office of the Quartermaster General (OQMG) staff studied prefabricated housing designs with an eye to reducing the cost of officers' quarters without sacrificing living space or amenities. With regards to emergency construction, the Army's architects and engineers weighed the potential savings represented by prefabricated barracks against the time-tested utility of conventionally constructed wooden buildings.

The OQMG ultimately recommitted to conventional methods for both permanent and temporary Army construction, despite pressure from prefabricators, members of Congress, and Army officials to adopt new building technologies. The evolution of mobilization construction around the time of the United States's entry into World War II is particularly instructive, both in terms of the OQMG's insistence upon using wood-frame construction, and in the Army's adoption of standardized methods and materials and mass-production methods to achieve savings in time and money similar to those promised by prefabricators. The OQMG's conviction that perfecting existing methods would ultimately prove more efficient than adopting new technologies and materials foreshadowed the rejection of fabrication in favor of mass production on site by postwar suburban "merchant builders" including Alfred Levitt.

This chapter begins with an examination of the various prefabricated-housing systems studied by the OQMG in the years leading up to World War II. It shows that Army officials objected to prefabrication on a number of grounds, including the high cost of the new products. In addition, many existing systems were only partially prefabricated, which meant that they required labor on-site as well as in the factories. The chapter next turns to the Army's alternative for emergency building, conventional wood-frame construction, and shows how Army contractors applied mass-production techniques on-site to save time. It concludes with a look forward to the suburban housing boom of the 1940s and 1950s, in which large developers like

Levitt & Sons similarly rejected factory fabrication in favor of the on-site mass production of conventionally-built homes.

Prefabrication and Permanent Army Construction

In the five years before the United States entered World War II, the OQMG studied a number of new housing systems, all of which relied to some extent on the factory fabrication of house parts, for use in both permanent and temporary Army construction. In the case of permanent construction, the goal was to reduce the cost per unit of officers' quarters. The OQMG staff eventually voted against prefabricated officers' housing, arguing that the new systems were at least untested and at worst inferior to conventional wood-frame or masonry construction.

In November of 1936, for instance, a major in the Office of the Quartermaster, Headquarters Sixth Corps Area inspected several prefabricated steel houses built by General Houses, Inc. near Chicago.[308] He saw two types of houses: a steel-frame and steel-panel model; and a more recently developed combination steel-frame and plywood-and-asbestos-panel design.[309] An article in *Architectural Forum* explained that the latter type was a newly-developed "happy medium" between the expensive steel-panel version and a flimsier plywood-panel model.[310]

[308] E. C. Gere to The Quartermaster General, "Steel Houses--General Houses, Inc.," November 30 1936, 1. 600.1 MISC 1937. General Correspondence Subject Files, 1936-45 (GCSF, 1936-45). RG 92. NACP. Major E. C. Gere, Office of the Quartermaster, Sixth Corps Area, was accompanied by a representative of General Houses, Inc., and Mr. Winarski, Assistant Architectural Engineer of the Office of the Quartermaster, Sixth Corps.

[309] Ibid., 1-3.

[310] "A Pioneer Prefabricator," *Architectural Forum* 64, no. 6 (June 1936): 524.

The steel-panel house the major visited had just been constructed. He noted that in this house type the steel panels typically served as a shell within which conventional interior finishes were applied. The steel panels were bolted together at special connectors, and were insulated with an asphalt-and-wood compound.

The Sixth Corps Area man praised certain aspects of General Houses Inc.'s steel-panel design.[311] "In general," he wrote, "the buildings are more air-tight than those of ordinary construction. The thinness of walls and partitions, the absence of radiators, hence less unusable space, are the desirable features." Nevertheless, he could not advocate the adoption of the system by the War Department. Because it was finished with conventional materials, the steel-panel house would cost about as much as a wood-frame home to build. In addition, the problem of condensation between the steel outer and plaster inner walls needed to be solved before the full potential of the system was realized. Third, the major worried that the house's panel construction limited planning flexibility. And finally, he was reluctant to pass on a design whose longevity had yet to be tested. The major had asked for a list of owners of General Houses-designed homes but had not received one. "It has, therefore, been impossible to examine any houses erected some time ago or talk with anyone who has lived in one," he wrote.[312]

The asbestos-panel houses the Sixth Corps Area representative visited were likely similar to two models published in the June 1936 *Architectural Forum* (see figure 4.1). Named the

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[311] *Architectural Record* published plans and information on four General Houses, Inc. steel-panel models in its January 1934 issue. The smallest house, the Mohegan (from $4500), was a single-story structure with two bedrooms, one bathroom, a living room, a dining room, and a carport. The largest, the Barrington ($8500), had two stories, with three bedrooms and a bath on the second floor and a living room, kitchen, and attached garage on the first. The houses were constructed of prefabricated steel-alloy panels on concrete foundations, with prefabricated roofing panels; traditional wood doors, windows, and interior trim; and linoleum floors. "General Houses, Inc.: Chicago," *Architectural Record* 75 (January 1934): 18-9.

[312] E. C. Gere to The Quartermaster General, "Steel Houses--General Houses, Inc.," November 30, 1936, 2-3. 600.1 MISC 1937. GCSF, 1936-45. RG 92. NACP.

"Goodwin" and the "Highland," both were one-story structures with two bedrooms, one bathroom, a kitchen, a living room, a storage pantry, and an attached one-car garage. The larger "Highland" also had a dining room and a front patio. Both models had flat roofs and relatively unornamented exteriors. According to the *Architectural Forum,* prices ranged from $2,990 for a three-room house to $7,000 for a six-room house.[313] A similar house included a 1936 study at Purdue University cost $4,625 to build.[314] The Purdue researchers found the asbestos-panel construction "somewhat less than satisfactory," as the major seems to have suspected it would be. "Two panels were broken in handling," the Purdue report stated; "two months after completion several underwindow panels had warped out sufficiently to permit water running down the windows to flow into the space between inner and outer wall surfaces; cracks have appeared over the surface of several other panels."[315]

[313] "A Pioneer Prefabricator," 524; The *Architectural Record* published plans for three larger steel-frame and composite-panel General Houses, Inc. houses in its March 1937 issue. "Acorn Knoll Estates, West Lake Forest, Illinois," *Architectural Record* 81 (March 1937): 18BT-19BT.

[314] Benjamin F. Betts, "Purdue Completes Year of Structural Research," *Architectural Record* 81 (March 1937), 34BT-35BT, 44BT.

[315] An extract from the Purdue report was published in *Architectural Forum* and quoted in a March 1, 1937 memorandum between members of the OQMG staff. Captain Walters to Lieut. Col. H. E. Pitz, "Report by the University of Purdue, Indiana concerning four low-cost experimental houses constructed by them," March 1, 1937. 600.1 MISC 1937. GCSF, 1936-45. RG 92. NACP.

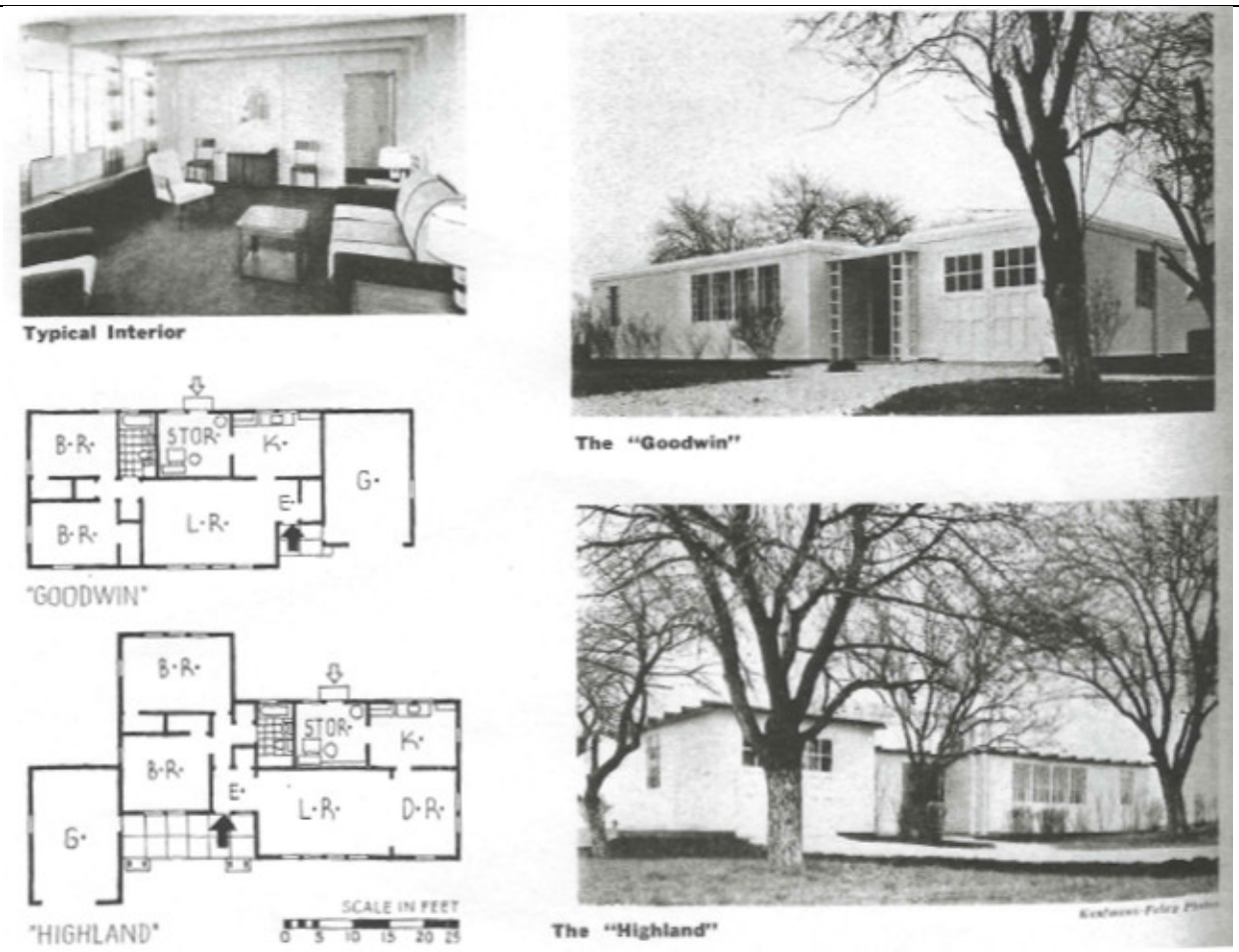

Figure 4.1: General Houses, Inc.'s "Goodwin" and "Highland" Prefabricated Houses. Published in "A Pioneer Prefabricator," *Architectural Forum* 64, no. 6 (June 1936): 524.

The Purdue analysis additionally indicated that substantial savings could only be achieved once the demand for General Houses's asbestos-panel product was high enough to warrant mass production.[316] Without a major savings in cost, and with the construction process itself relatively untested, the War Department had little incentive to choose this particular panel system over wood-frame construction.

[316] Ibid.

Several years later, the OQMG revisited the question of prefabrication in permanent construction. At the end of January 1940, Major F. S. Conaty, the Constructing Quartermaster at Fort Bragg in North Carolina, sent Chief of Staff General George Marshall a clipping from the *Architectural Forum.* The article described a series of partially-prefabricated plywood houses built by Standard Houses Corporation near Chicago. "On your recent trip to Fort Bragg, you expressed an interest in low-cost prefabricated houses for non-commissioned officers," Conaty wrote to Marshall. The Standard Houses units, he explained, would be suitable for staff sergeants. The houses might require larger outlays in maintenance costs than standard OQMG NCO quarters, wrote Conaty, but the first cost was so much reduced as to make the venture worthwhile. "I am sure that the quarters would be more nearly in line with those occupied by families in civil life in similar salary brackets," he concluded, touching upon one of Army officials' key concerns.[317]

The *Architectural Forum* described Standard Houses's Chicago showing as a coup for both sellers and buyers. The four men who made up the company—headed by Bauhaus-trained architect Bertrand Goldberg—had

> glued together the knock-down parts of five identical plywood houses, assembled them in Chicago suburb, Melrose Park, sold them all in one day for the bargain-counter price of $2,995 (including land). And they made those houses attractive to boot—both outside and in.[318]

The houses were "actually only half-prefabricated," the *Architectural Forum* article explained. Plywood panels for walls, ceiling, and roofs, as well as plywood wardrobes and cabinets, were assembled in the factory and trucked to the lots. The actually assembly, as well as the installation of the plumbing and wiring, was performed on site. The on-site work was

[317] F. S. Conaty to General George C. Marshall, January 31, 1940. 623. GCSF, 1936-45. RG 92. NACP.

[318] "Factory Houses for $2,995," *Architectural Forum* 72 (January 1940), 66.

organized according to mass production methods, with each builder responsible for only a small portion of the job. In this way the construction crews, learning as they went, would spend less and less time on each successive house.[319]

As for the purchase price of the house, actual construction accounted for only $1980; the rest of the cost went to land, landscaping (factors the Army could leave out), and profit. According to company president Bertrand Goldberg, the savings was almost entirely due to the factory methods applied to the house's construction; an identical house built by conventional means would cost $3,000. In fact, only twenty-five percent of the construction cost, or about $500, went to making the plywood shell. The remaining seventy-five percent was spent on mechanical equipment, insulation, decorating, trim, and roofing.[320]

The Standard Houses prefabricated units were "well planned," according to the *Architectural Forum.* "Architects Black and Goldberg kept interior partitions to a minimum, thus lent a sense of space to cramped quarters," the article explained. The square plan featured a living room, two bedrooms, the kitchen, and one bathroom arranged around a small, square hall. The front door entered directly into the living room, which in turn was open to both the kitchen and the hall. The kitchen could be closed off with a moveable screen. The house's technological innovations included a flexible showerhead.[321]

The *Architectural Forum* article on Standard Houses's Chicago homes admitted that the "[b]iggest stumbling block in merchandising factory-made houses is transportation—each additional mile that knock-down parts are shipped adds to the total cost." Standard Houses's

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[319] Ibid.

[320] Ibid., 67.

[321] Ibid.

plywood panels weighed less than other prefabricated house materials, and thus gave the company an edge in shipping. Goldberg and Black estimated that each house could be shipped 1,000 miles and still be profitable.[322]

General Marshall forwarded Conaty's letter to the Quartermaster General for comment. OQMG staff were first incensed by Conaty's impertinence: he had gone above their heads to the Chief of Staff, and insulted the office's own designs in the process. In addition, the Army architects were less than impressed by the Standard Houses designs. Without more detail drawings, it was impossible to comment on the structural stability of the plywood design, an OQMG staff member explained to the Adjutant General. He did, however, point out that the article made mention of the Melrose Park development being outside of Chicago's building code. This was cause for concern, he wrote, as "city building codes do not, in general, require anything in residence construction in any way unreasonable but do impose on prospective builders requirements which will ensure construction of buildings which will provide safe and sanitary living conditions for the occupants."[323]

The OQMG architect also listed numerous specific objections to the Standard Houses design. At 560 square feet the house was much smaller than "even the smallest and cheapest of the non-commissioned officers' quarters constructed in recent years." The bedrooms were too small to accommodate even basic bedroom furniture. The house was also lacking in storage space, the same being provided for only by a built-in wardrobe in each bedroom. Nor did the house have space for laundry tubs.[324]

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[322] Ibid., 36.

[323] Seaman to The Adjutant General, "Low cost prefabricated houses for Noncommissioned Officers," February 12, 1940, 1. 623. GCSF, 1936-45. RG 92. NACP.

[324] Ibid., 1-2.

Adopting a Standard Houses-type design for NCO quarters would indeed save money up front, the OQMG staff member concluded, but only "if the principle of providing permanent, low maintenance cost, substantial and long lived structures is abandoned." Conventionally-constructed NCO houses, moreover, offered a range of amenities unavailable in a design as basic as Standard Houses's, including special play and toy storage areas for children. Whatever Conaty's assessment of the Standard Houses design vis a vis civilian standards, adopting such a reduced plan would significantly alter the quality of life of the NCO officers and their families.[325]

In addition to requesting information on the Standard Houses prefabricated unit in particular, the Adjutant General also ordered the OQMG to undertake a study of NCO housing more generally, with the goal of reducing the cost by 30%. Colonel Hugo E. Pitz, a graduate of the Rensselaer Polytechnic Institute, took charge of the project. The cost of any particular set of quarters already varied considerably, he explained, from about $6,500 to $9000, according to whether it was a single, double or row house; where it was built, meaning variations in climate, freight rates, and materials; and local labor costs. Starting from a rough average of $7500, a 30% reduction would mean building each set for $5000 or less.[326]

The OQMG developed two different reduced-cost NCO houses, one each of conventional and prefabricated construction. The former, plan 625-6520A, was a two-story house with either frame or masonry walls, and was well suited for either warm or cold climates. It was considerably larger than the Standard Houses model. The basement had room for a central heating plant, clothes-washing facilities, and storage. The first floor contained a living room, a

[325] Ibid., 2.

[326] Pitz to The Adjutant General, "Prefabricated Houses for Non-commissioned Officers," May 9, 1940, 1. 623. GCSF, 1936-45. RG 92. NACP.

dining alcove, a kitchen, and two bedrooms and one bath. The second floor was one continuous space. "It may be used for general household purposes," wrote Pitz, "or partitioned temporarily with light material if desired. It is an economical method of obtaining overflow space for families requiring more accommodations than are provide on the first floor."[327] This house, according to OQMG estimates, would cost about $5000 in the north, possibly less in warmer climates.[328]

Pitz enumerated for the Adjutant General the various advantages of the conventionally-constructed NCO house: as a single-family house, it offered a "degree of privacy"; it had a standard heating plant (rather than a single stove, as in the Standard Houses design); it contained room for storage, in the basement; and it allowed for expansion into the second floor.[329]

The prefabricated reduced-cost NCO quarters, plan 713-101A, made use of Cemesto insulating board for walls and ceilings. The John B. Pierce Foundation, Pitz pointed out, had used the same material in its experimental low-cost houses. "A representative of this office inspected a model house [built with Cemesto boards] recently and was well impressed with its value," Pitz wrote.[330]

The John B. Pierce Foundation, named for the founder of the American Radiator Company, was established in 1924 to promote housing research. In subsequent years, the foundation, whose laboratories were in Raritan, New Jersey, sponsored a number of experiments

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[327] Levitt and Sons similarly included an unfinished attic in their earliest Levittown, New York houses, and encouraged residents to convert it to living quarters at their own expense. Peter Bacon Hales, "Unfinished: Expanding and Decorating Levittown," *Levittown: Documents of an Ideal American Suburb*, http://tigger.uic.edu/~pbhales/Levittown/Decorating.html (accessed October 17, 2012).

[328] Pitz to The Adjutant General, "Prefabricated Houses for Non-commissioned Officers," May 9, 1940, 1. 623. GCSF, 1936-45. RG 92. NACP.

[329] Ibid., 1.

[330] Ibid., 2.

in new construction methods and materials.[331] The Cemesto construction system was developed by the Pierce Foundation and Skidmore, Owings & Merrill during the late 1930s. In a Cemesto house, builders attached asbestos composite boards as curtain walls to a skeleton frame of four-by-four inch wood columns, sills, and plywood girders. As the *Architectural Record* explained of a Cemesto house built by the Stansbury Corporation near Baltimore, Maryland in early 1941, "Unlike a usual bearing *wall* of traditional materials . . . , or a heavy panel unit assembly requiring special means for support and attachment, the curtain wall in the Baltimore house is simply a material, as it comes from the factory."[332] Interior and exterior Cemesto panels were factory fabricated in a standard size of four by twelve feet, then were trucked to the site along with precut framing materials. The boards required no further finishing and were ready for paint.[333]

In order to reduce the cost of the prefabricated structures to $3790 per quarters, the OQMG had planned for double houses. Each quarters would include a combined living and dining room, two bedrooms, one bathroom, a kitchen, and porches to both the front and rear. Though the OQMG had planned the house with a southern climate in mind, Pitz noted, Cemesto houses had been erected in New York and on Long Island.[334]

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[331] See, for example, "Framing and Details Key to Efficiency," *Architectural Record* 108 (July 1950): 135-139.; "Houses: John B. Pierce Foundation," *Architectural Record* 89 (May 1941): 63-66.; "Research in Low-Cost Housing Yields a Solution in Plywood," *Architectural Record* 86 (September 1939): 41-45.

[332] "Houses: John B. Pierce Foundation," 64.

[333] Ibid. Both interior and exterior panels were composed of insulation board covered on both sides with 1/8 inches of asbestos cement. Interior panels used 1 1/2-inch insulation board; interior panels used 1/2-inch insulation board. All panels were laid horizontally.

[334] Pitz to The Adjutant General, "Prefabricated Houses for Non-commissioned Officers," May 9, 1940, 2. 623. GCSF, 1936-45. RG 92. NACP.

The low cost of the Cemesto double quarters, Pitz explained, was partially dependent on building a number of the houses at once—a consideration common to all factory-fabricated designs. "It is almost entirely a job prefabricated in the shop," Pitz wrote, and could be erected on site within two days of pouring the concrete footings. As for finishing, he noted, "Exterior painting is not essential but for aesthetic purposes, a proper scheme of color combinations would aid materially in its acceptance as living quarters." In contrast to Seaman's condemnation of the Standard Houses plywood house, Pitz marveled at the possibilities of building with Cemesto board. "A careful inspection of the plans is suggested," he concluded, "to fully appreciate the ingenuity, simplicity, strength and probably long life of this type of construction.[335]

Despite Pitz's enthusiasm for the Cemesto system, the Adjutant General reported that the prefabricated quarters were "not considered suitable" by the Secretary of War. He instead suggested that Pitz revisit the conventional-construction design, this time planning for attached houses.[336] Though the Adjutant General did not elaborate on the Secretary of War's dislike of the Cemesto plan, several factors likely came into play. First was the conflict between the Army's commitment to open bidding and the adoption of a proprietary construction product. If the Army committed itself to building in Cemesto board, it would be beholden to the price structure set by the Celotex Corporation, the makers of Cemesto. In addition, Cemesto-board houses, according to Pitz, were relatively untested in the northern states of the US. It would make little sense for the OQMG to adopt two such technically distinct standard plans for NCO officers: conventional frame or masonry construction for the north, and Cemesto-board construction for the south. Finally, as Pitz pointed out, prefabricated methods saved money in

[335] Adjutant General to The Quartermaster General, "Prefabricated houses for NCO - Ft. Bragg, N.C.," May 27, 1940. 623. GCSF, 1936-45. RG 92. NACP.

[336] Ibid.

part because they relied on *mass* production methods. Thus a transition to Cemesto-board construction would save the Army money only if they were prepared to undertake construction of a large number of officers' quarters at once; conventional construction methods, on the other hand, offered more flexibility in terms of the scale of the job.

Prefabrication and Temporary Army Construction

With war in Europe looming, the problem of emergency construction was also on the minds of Army officials. In tandem with their studies of prefabricated officers' housing, OQMG staff also examined the applicability of factory fabrication to temporary housing, especially barracks for stateside training camps. Once again, the Army architects agreed that prefabricated methods failed to top conventional OQMG building methods.

In late 1937 the Office of the Assistant Chief of Staff asked the Quartermaster Corps to prepare estimates for two semi-permanent divisional camps constructed of prefabricated materials, one each near San Antonio, Texas, and Fort Lewis, in Washington state. A major in the Quartermaster Corps called a conference of the OQMG staff to consider the problem. The consensus of the meeting was revealing. "No one knew of any company which had perfected prefabricated materials suitable for the complete construction of barracks, hospitals, administrative building, post exchanges, warehouses and similar buildings," the major wrote. In fact, the only major prefabricated design element in widespread production was the "so-called prefabricated standard truss, or beam," for use in large spans. Thus only about 6% of each building would actually comprise prefabricated parts. Even if a total prefabrication system were available, it would likely use steel, which would be rationed during wartime. Finally, the

conferees suspected that no single company or group of companies would be capable of turning out the quantity of buildings required during the short build-up to mobilization.[337]

However theoretical the construction of a prefabricated divisional camp thus remained, the OQMG technical group had tried to calculate its cost. They used the only data available, namely the price quoted for a National Guard camp mess hall constructed according to the Harnischfeger system. The Harnischfeger Corporation of Milwaukee, Wisconsin, a manufacturer of mining and construction machinery, began its foray into prefabrication in 1935, when company head Walter Harnischfeger dedicated $1,000,000 to the erection of a prototypical prefabricated house. The following year, according to a 1937 *Life* magazine article, Harnischfeger Corporation's new Pre-Fab Houses division sold 65 units. The houses were built of steel, fiberboard, gypsum board, and plywood panels pressed between vertical steel joins.[338]

The cost of the Harnischfeger system mess hall, the OQMG major wrote, was 35% higher than the cinder-block model used in concurrent training camps, and 90% greater than the OQMG design (probably wood frame) used in the same camps. Similarly, the conference attendees agreed that when prefabricated housing manufacturers had submitted bids for quarters in recent years, "[i]n practically every case their estimates were at least 10% higher than the lowest bids received, and if they were required to put up bonds and comply with formal contracts of the Government, it is probable that their prices would have been still higher." Moreover, any prefabricated structure with an exterior finish—namely, stucco or brick—in common with

[337] J. Moultrie Ward to Assistant Chief of Staff, G-4, "Prefabricated Buildings, or Low Cost Construction in Army Posts," November 18, 1937, 1. 600.1 Prefabricated Bldgs 1937. GCSF, 1936-45. RG 92. NACP.

[338] "Five Men Erect this Pre-Fabricated House in 8 Hr.," *Life* 3, no. 5 (2 August 1937): 30-31, http://books.google.com/books?id=o0UEAAAAMBAJ (accessed October 23, 2012).

conventional construction would cost at least as much as a comparable wood-frame or masonry building.

The only system of prefabricated construction the OQMG conferees came close to endorsing was that designed by the Army for use by the Civilian Conservation Corps (CCC). The CCC buildings, which were manufactured by the Green Lumber Company of Laurel, Mississippi, used a simple panel system in which insulation board and wood siding (for exterior panels) or a thin sheathing material (for interior panels) were attached to a 7-foot by five-foot wood frame.[339] Barracks of this type cost about $160 per man to build, as opposed to $1,220 per man for "the very best barracks," likely of the War Department Housing Program type (see chapter 3). "In every case," wrote the major, "it can be reliably stated that the Government gets just what it pays for." And much of what Congress paid for in the case of permanent brick or stucco barracks, he explained, had little to do with the structure itself. Rather, beginning with the Barracks Completion project of the late 1920s, the Army General Staff had insisted on more and more in-built amenities, including refrigerators, water coolers, and amenities. In a recent hospital project, for example, the building's equipment had contributed one-third of the total cost of construction.[340]

Having thus dispelled the Assistant Chief of Staff's notion that it would be possible to fully prefabricate a divisional training camp, the OQMG drew up plans for a 10,000-man camp

[339] We know the Green Lumber Company manufactured the buildings from Corp of Engineers correspondence. See, for example, J. S. Seybold to Mr. Donald M. Nelson, "Authority to Negotiate Contract for Prefabricated Buildings with Plumbing and Appurtenances," June 25, 1941. Prefabrication. Office of the Undersecretary of War Purchase and Contract Branch Construction Section Subject Files 1940-1942. Records of the Office of the Secretary of War, Record Group 107. NACP.; The National Archives at College Park, College Park, MD, holds blueprints for demountable CCC buildings, filed by Corps Area. See Blueprints, 1935-40 [Architectural Drawings]. Records of the Civilian Conservation Corps, Record Group 35. NACP.

[340] J. Moultrie Ward to Assistant Chief of Staff, G-4, "Prefabricated Buildings, or Low Cost Construction in Army Posts," November 18, 1937, 2. 600.1 Prefabricated Bldgs 1937. GCSF, 1936-45. RG 92. NACP.

of permanent buildings incorporating as many prefabricated elements as possible. The buildings were steel-frame structures with concrete floors and roof slabs and walls faced with brick on the exterior and tile on the interior. Roofing would consist of insulation covered with tar or asphalt. The OQMG recommended three-story buildings to lower utilities costs and conserve ground area. Prefabricated elements to be used in the designs included standard steel bays, stock-size steel windows, steel stairways, and stock wood frames and sash.

Were the buildings to be constructed for an emergency, the OQMG major explained, the brick-and-tile walls could be replaced with sheets of corrugated metal or asbestos; the floors and roofs would be built of wood or other lightweight materials. After the buildings' temporary use, workers could strip off the temporary materials and replace them with permanent ones, using the same steel frame.[341]

The OQMG's technical staff was dissatisfied with the results of their experiment, and recommended against using the steel-frame system, especially before trying it out on a large scale. Moreover, wrote the major, "It is the opinion of this office that planning for emergency construction should consist of genuinely temporary buildings. Buildings of the so-called 'semi-permanent type' are neither one thing nor another and become a source of great expense and trouble after their original use has passed."[342] Ward recounted the experience at Fort Hoyle, where the Army had constructed a series of semi-permanent buildings in 1918. The barracks, built of hollow-tile walls, asphalt felt roofing, and pine floors and beams, were now in serious disrepair. "Termites have so thoroughly destroyed the wood supports, flooring, etc. that there is a question of how much longer they can be used with safety. Repairs would seem more expensive

[341] Ibid., 4.

[342] Ibid., 5.

than rebuilding," which itself would cost, according to a recent request, over $2,750,000. "This is not a satisfactory record for semi-permanent buildings," he concluded.[343]

Two years later, in 1939, the Secretary of War, having been bombarded with literature from prefabricated housing companies, initiated another test of conventional versus prefabricated cantonment construction. He proposed opening the bids for barracks at three air depots (Middletown Air Depot, Sacramento Air Depot, and Fairfield Air Depot) to steel construction companies. This would entail issuing parallel specifications for conventional wood-frame and prefabricated steel construction.[344] The OQMG complied, adjusting the bid sheets accordingly.[345]

The Secretary of War's test was a response not just to prefabricators' claims, but also to an ongoing quarrel between the Chief of the Air Corps and the head of the OQMG's Construction Division. Earlier that year, the Air Corps chief had withheld his approval of the OQMG's layout plans for the Air Corps Expansion Program because they showed the men living in two-story mobilization-type barracks. The Chief wanted Civilian Conservation Corps-type prefabricated barracks instead, to be erected by the troops. Finally, after several months of debate, the Air Corps and the Construction Division effected a compromise: the Air Corps would accept wood-frame mobilization buildings if they prevailed in a bidding process open to both prefabricators and conventional construction companies.[346]

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[343] Ibid., 3.

[344] Adjutant General to The Quartermaster General, "Steel Fabricated Buildings--Middletown, Sacramento, and Fairfield Air Depots," October 19, 1939. 600.1 Steel Fabricated 1939. GCSF, 1936-45. RG 92. NACP.

[345] New Construction Branch, Design Section (Walters) to Colonel Pitz, "Steel Fabricated Buildings--Middletown, Sacramento, & Fairfield Air Depots," October 23, 1939. 600.1 Steel Fabricated 1939. GCSF, 1936-45. RG 92. NACP.

[346] Fine and Remington, *The Corps of Engineers*, 95-96; U.S. Army Corps of Engineers, Seattle District, Technical Center of Expertise for Preservation of Structures and Buildings, *Context Study of the United States Quartermaster*

As a prelude to accepting bids for the three airfields, the Assistant Chief of Staff ordered one representative each from the Quartermaster Corps and the Corps of Engineers to investigate several existing examples of prefabricated construction. The men would first visit Birmingham, Alabama, where U.S. Steel had built a prefabricated barracks.[347]

The Quartermaster General appointed Major Howard B. Nurse, a long-time member of his staff, to take part in the expedition.[348] Nurse was impressed by what he saw in Birmingham. The barracks, built by U.S. Steel subsidiary Tennessee Coal, Iron and Railroad Company, seemed to Nurse to be of "the most logical construction of this type yet produced by any of the prefabricated people." He went on to say that, while he questioned the ability of U.S. Steel and other prefabricators to match in their designs the quality achieved by conventional wood-frame construction, he would welcome such a development—within limits. If steel prefabricated structures could be built at no more than 125% of the cost of frame built-in-place structures, they might reasonably replace the latter. If the buildings were to cost more, he cautioned against their use. His calculations, he explained, were based on wood's higher maintenance cost; a slight increase—less than 50% over the cost of wood—in first cost of steel construction would be paid for by savings in maintenance over the long run.[349]

General Standardized Plans, 1866-1942 (Aberdeen Proving Ground, MD: U.S. Army Environmental Center, Environmental Compliance Division, 1997), 50, http://www.denix.osd.mil/cr/HistoricBuildingsStructures/ConTextStudies.cfm (accessed October 31, 2012).

[347] U.S. Steel was under contract to build barracks like these for the Colombian government. George P. Tyner to The Quartermaster General, "Prefabricated Construction," December 4,1939. 600.1 Prefabricated Bldgs 1937. GCSF, 1936-45. RG 92. NACP.

[348] Henry Rockwald to The Adjutant General, December 7, 1939. 600.1 Prefabricated Bldgs 1937. GCSF, 1936-45. RG 92. NACP.

[349] Major Nurse to Captain Walters, "Prefabricated Steel Frame Buildings," December 15, 1939, 1. 600.1 Prefabricated Bldgs 1937. GCSF, 1936-45. RG 92. NACP.

The Tennessee Coal, Iron and Railroad Company barracks design was likely similar to the homes the company built for the Farm Security Administration, also in 1939 (see figure 4.2). The buildings' exteriors were made entirely of steel, with prefabricated steel panels joined together around the perimeter of a steel footing plate. Interior walls were insulation board over steel framing; the floors were wood over steel joists.[350]

[350] "Steel-Panel Prefabricated Farm Buildings Erected in the South," *Architectural Record* 85 (January 1939): 38-39.

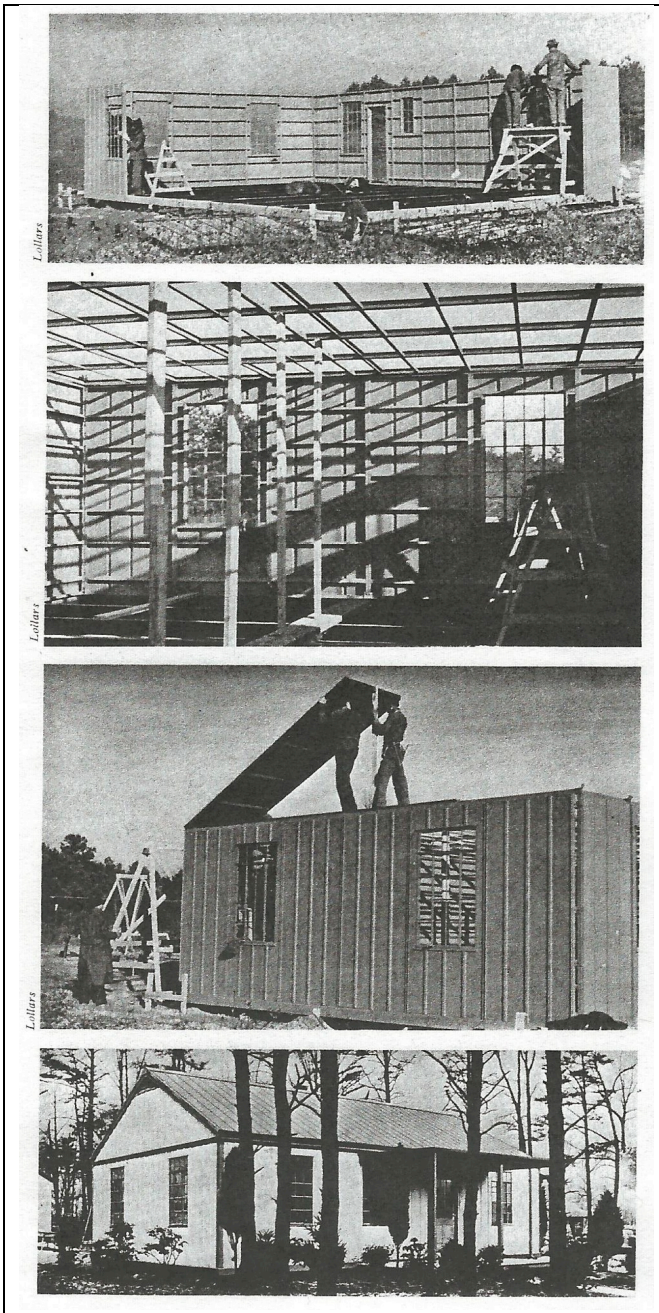

Figure 4.2: Tennessee Coal, Iron & Railroad Company, Prefabricated Farm Buildings. Published in "Steel-Panel Prefabricated Farm Buildings Erected in the South," *Architectural Record* 85 (January 1939): 38.

Nurse did criticize the Tennessee Coal, Iron and Railroad Company design on a couple of points. He questioned the compatibility of the allowable stress used in U.S. Steel's calculations

with the American Institute on Steel Construction guidelines. He also took issue with the floor load, suggesting that it should be increased from 40 to at least 60 pounds. This, wrote Nurse, could be accomplished by switching from 14-gauge to 11-gauge pressed steel in the floor beams, and by changing the way the floor beams were supported.[351]

Nurse suggested that the OQMG prepare a typical barracks plan for construction according to the Tennessee Coal, Iron, and Railroad Company system. But though he was, in general, pleased with the U.S. Steel design, Nurse also wished to defend the OQMG against allegations—in the case conventional wood construction was used in the end—that it failed to consider prefabricated design. "We undoubtedly will be called on to show the course of our studies and, whether this building plan is ever put to use or not, we should be in a position to furnish a plan of a steel prefabricated building of this type, if called upon, together with estimates of cost," he wrote.[352]

Nurse's fears that official fascination with prefabrication would override good sense were not unfounded, as the OQMG's experience with the airfield bids would show. At the end of November, the office received bids for the construction of two barracks and one mess hall at Middletown Air Corps Depot. Per the Adjutant General's directive, the office had issued two sets of specifications, one each for conventional wood frame construction and prefabricated steel construction. The low bidder for conventional construction was S. W. Shoemaker and Son, who estimated the cost of the three buildings at $24,240. The low bid for the second category, from

[351] Major Nurse to General Seaman, "Prefabricated Steel, versus wood frame construction," December 20, 1939, 1. 600.1 Prefabricated Bldgs 1937. GCSF, 1936-45. RG 92. NACP.

[352] Major Nurse to Captain Walters, "Prefabricated Steel Frame Buildings," December 15, 1939, 2. 600.1 Prefabricated Bldgs 1937. GCSF, 1936-45. RG 92. NACP.

Walbridge, Aldinger Company, came in at $16,850—over $7,000 less than the wood-frame bid.[353]

After a thorough study of the Walbridge, Aldinger design, Nurse's office recommended that the Middletown contract be awarded to S. W. Shoemaker, even though the conventional-construction bid was over 40% higher. The Walbridge, Aldinger scheme "was of an inferior design and came far from meeting the factors of safety set up under the American Institute of [S]teel [C]onstruction. It does not appear reasonable," Nurse concluded, "that the War Department should at this time disregard such standards of common practices pertinent to good construction."[354]

Not long after, on December 7, 1939, bids for a nearly identical project (two barracks and one mess hall) for Patterson Field came in to the OQMG. The lowest bid in the wood-frame construction category came from George W. Timmons, Inc., and totaled $21,965. The low bidder in the prefabricated steel group was again Walbridge, Aldinger Company. The company's Patterson Field design was valued at $21,050.[355]

Just over a week after the OQMG received the bids for Patterson Field, Walbridge, Aldinger submitted alternative plans for the project, having "become aware that The Quartermaster General would not recommend awards based on the inferior plan submitted with their bid . . . ." Nurse urged the OQMG to stick to its policy against considering revisions, as the Air Corps required the new buildings immediately. He was overruled by a member of the

[353] Major Nurse to General Seaman, "Prefabricated Steel, versus wood frame construction," December 20, 1939, 1. 600.1 Prefabricated Bldgs 1937. GCSF, 1936-45. RG 92. NACP.

[354] Ibid., 2-3.

[355] Ibid., 1.

General Staff, who seemed to think that the OQMG was biased against steel construction.[356] "I cannot understand why the Staff should feel this way as I am sure the Quartermaster General would welcome this type of construction for peace-time use provided the design is structurally sound and the cost to the Government is within reason," Nurse fumed. But under current conditions accepting a prefabricated steel structure would be unwise. "The Quartermaster General has never had a failure in a single structure," he wrote, "and cannot well afford to risk failure by accepting inferior design in order to bring steel construction within the range of wood prices."[357]

Despite his reservations, Nurse suggested the OQMG consider the second set of plans being submitted by prefabricators Walbridge, Aldinger—but only because the pressure from Army higher-ups was unrelenting. "I believe we had better go along on these revised plans, regardless of the fact it might be somewhat unethical, in order that the animosity of G-4 may not be further aroused," he advised his supervisor in the OQMG.[358]

As it had for permanent construction, the OQMG also investigated specific systems' suitability for temporary Army construction. In early 1940, the Adjutant General wrote the Quartermaster General with news that the Lumber Manufacturers Association planned to erect a prefabricated wooden barracks building near Washington, DC. The Adjutant General forwarded plans of the proposed building for consideration by the OQMG.[359]

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[356] Ibid., 2-3. Nurse wrote "Colonel Robertson, I believe, has the opinion that we are prone to use steel construction regardless of its merits," but the next sentence, "I cannot understand why the Staff should feel this way . . . ." indicates that Robertson in fact accused Nurse and his office of a bias *against* steel construction.

[357] Ibid., 2-3.

[358] Ibid., 3.

[359] Adjutant General to The Quartermaster General, "Construction of sample barracks by Lumber Manufacturers' Association in the vicinity of Washington, D. C.," February 26, 1940. 600.1 Prefabricated Bldgs 1937. GCSF, 1936-45. RG 92. NACP.

A member of the OQMG staff submitted his report on the Lumber Manufacturers Association barracks in March of 1940. Speaking on the grounds of "past experience and the standards of this office," he pointed out that prefabrication was useless if, once on site, the factory-fabricated parts could not be assembled without further alteration. He was concerned that the wood panels in the Lumber Manufacturers Association's proposed system required too much on-site adjustment in order to fit the building's frame.[360]

The OQMG representative worried in addition that the Lumber Manufacturers Association design was "much too flimsy to be used in the Army as a Barracks or Mess Hall." The roof and floors each could handle only 25 pounds per square foot live load, and the floors were so springy as to appear even weaker. The building was insufficiently braced for horizontal wind loads, and the footings were sized for ideal soil conditions. "The building as a whole will rack and twist after a small amount of service," he concluded. "In a hurricane region these buildings will be dangerous to life, limb, and property."[361] The barracks "were not equal in strength or stability to the type of wood Barracks and Mess Buildings, that are now being built by the Construction Division," he wrote, and thus he could only endorse their use in the case that portable buildings were required.

Months later, in the fall of 1940, the OQMG commissioned a design for mobilization barracks based on the Seaton Housing Corporation's system of construction. The Seaton Housing system had been developed in New York by Guy C. Seaton, an engineer, and Philip

[360] Major Frick to Lieutenant Dreyer, "Prefabricated Wood Construction," March 12 1940, 1. 600.1 Prefabricated Bldgs 1937. GCSF, 1936-45. RG 92. NACP.

[361] Ibid., 1-2.

Hanson Hiss, III.[362] Though Hiss was never formally trained as an architect, he dabbled in building design in addition to being a photographer and, after World War II, working for the United States Information Agency. Hiss would become best known as a client of Paul Rudolph, who built his Sarasota home in 1953.[363]

The Seaton Housing system's primary structural component was a lightweight I-shaped beam composed of two sheets of bent steel fillet-welded together. The space to either side of the weld could be filled with a composition that would accept nails. Multiple steel beams were attached to one another to form a self-supporting frame, which was then bolted to a concrete foundation. For the Army, Seaton and Hiss designed a two-story steel-frame barracks building with steel-framed windows and doors, Gypsum Wall Board partitions, and linoleum or asphalt tile floors.[364]

In his report on the Seaton Housing proposal, a member of the OQMG staff concluded that "the design submitted offers no decided advantages over the wood frame mobilization type structures now in use, and that its cost would exceed that of the present type of construction."[365] Because the sheets of steel used in the Seaton Housing beams were only one-tenth of an inch thick, and because of how they were bolted to one another, the frame would lack rigidity and

[362] This Philip Hiss seems to not have been related to the Philip Hiss who served as chairman of the housing committee of the Council of National Defense during World War I and undertook a study of Army housing with the American Civic Federation beginning in 1928.

[363] "Philip H. Hiss 3d, 78, Designer of Buildings," *New York Times,* November 4, 1988.

[364] Seaton Housing Corporation, "Construction Details and Specifications for U.S. Army Barracks, Job #700," 1940, October 1940. 600.1 Mobilization 1941. GCSF, 1936-45. RG 92. NACP.

[365] Major Cashen to Major Walters, "Seaton Housing Corporation Construction for Mobilization Type Buildings," October 11, 1940, 1. 600.1 Mobilization 1941. GCSF, 1936-45. RG 92. NACP.

require regular maintenance to prevent a breakdown. "From this standpoint," he explained, "the wood frame mobilization type structures are superior."[366]

The OQMG staff member further disputed the Seaton Housing Corporation's estimate of cost, $7,000 per barracks building, as far too low. A better figure would be $10,000 per building, based on a cost of 20 cents per cubic foot. Constructing a standard wood-frame mobilization barracks, by contrast, cost only $7,500. Nor did the Seaton Housing design have an advantage in terms of time required for construction, he explained; at 30 days per building, it only matched the rate for conventional construction. In the balance, then, Seaton and Hiss had not appreciably improved upon the Army's time-tested system of mobilization construction.[367]

The report writer's superiors agreed that the Seaton Housing design, while not a complete failure, did not warrant immediate action. A major in the OQMG concluded, "With changes in regiments and growing shortage of steel, I believe we should file and take no further action. I don't see why we have to answer this any more than any other salesman talk. An answer usually serves only to prolong the argument."[368]

Also in the fall of 1940, the Army awarded a contract to two Alabama firms to build at Fort McClellan a complete divisional camp out of prefabricated tent frames and precut wood in

[366] Ibid., 1-2.

[367] Ibid., 2.

[368] Handwritten notes attached to Major Cashen to Major Walters, "Seaton Housing Corporation Construction for Mobilization Type Buildings," October 11, 1940, 1. 600.1 Mobilization 1941. GCSF, 1936-45. RG 92. NACP.

just 34 days.[369] The contract, totaling $4,084,000, covered 282 buildings and almost 4,000 tents, plus 18 miles of roads, 12 miles of utilities lines, and several miles of railroads.[370]

The Fort McClellan experiment was "a mistake," the site's lead contractor recalled several months later. The project was plagued by problems. The lumber mill at Anniston was undersupplied on occasion, causing delays; grade marks were cut off the lumber prior to its arrival at the site, making inspection impossible; because pre-cut lumber was bundled by building, rejecting a single piece meant holding up the construction of the entire building; the cost of cutting the lumber at the outside mill "would have paid for setting up and operating a mill on the site." The double-hauling of materials—to the Anniston mill, then from the mill to Fort McClellan—made no sense; in fact, cutting the lumber on site would have eliminated all of the problems mentioned above.[371]

OQMG Objections to Prefabrication

As the above examples show, the OQMG objected to factory fabrication of permanent and temporary housing on numerous grounds. Some factors were specific to Army construction or to mobilization conditions. For instance, the Army policy dictated that construction contracts were to be awarded to the lowest bidder. This made it impossible to adopt a proprietary design except on a project by project basis. In addition, OQMG staff worried about the prevalence in prefabrication systems of steel, which was rationed in wartime.

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[369] Fine and Remington, *The Corps of Engineers*, 232-233; The contract, incidentally, was the subject of a Supreme Court ruling on the applicability of state sales taxes to the purchase of materials for federal government contracts. See "Allows State Tax on Defense Work," *New York Times,* November 11, 1941.

[370] Anthony H. Leviero, "Labor Rushes Job on Camp for 27th," *New York Times,* October 31, 1940.

[371] Chief, Engineering Branch, Construction Division to Chief, Design & Engineering Section, "Prefabricated Tent Frames and Pre-cut Lumber," February 5, 1941. 600.1 Prefabricated Bldgs 1937. GCSF, 1936-45. RG 92. NACP.

But others among the Army's concerns regarding prefabrication applied to civilian housing as well. Three were paramount. First, OQMG architects and engineers worried because the majority of the products being advertised in the late 1930s and early 1940s were relatively untested. In particular, the durability of prefabricated housing was still in question, because few examples had been in use for more than a few months or years. In cases involving new materials, even theoretical calculations were difficult due to a lack of data.

The cost of prefabricated construction was also a concern. The purchase price of individual units tended not to be much lower than the cost of construction of a conventionally-built structure. The OQMG staff speculated that some designs would carry high maintenance costs as well, due to the materials used and their method of combination. Finally, all prefabrication systems confronted the problem of distribution: shipping large sections of structures from the factory to the site, whether by rail or by truck, was technically trickier and thus more expensive than was transporting raw materials. And the purchase price for the final product had to cover not one but two rounds of transportation: of the raw materials, from their origin to the factory; and of the house parts, from the factory to the job site.

Third, and perhaps most crucially, most available prefabrication systems required on-site finishing. In many cases the finishing was done by skilled laborers using traditional methods. This duplication of labor brought the cost of factory-fabricated housing further up. But it also meant that two sets of workers were required to complete one job: one gang of skilled or unskilled laborers at the factory; and a second, usually skilled, crew at the worksite. This method was wildly inefficient, especially when compared to the alternative: the application of mass-production methods on-site to traditional wood-frame construction.

The Conventional Construction Alternative

As the war in Europe intensified, Army officials began to outline a program for emergency construction. But prefabrication, in many ways unappealing to OQMG, was not the Army's only option. The Quartermaster Corps could continue building temporary housing as it had for decades: in wood frame, using orthodox building methods.

The OQMG's choice was made easier by recent developments in large-scale construction. Since at least World War I the Army as well as private builders had been experimenting with the application of factory techniques on the site of large jobs. Rather than build structures in a factory and ship them to a site, these innovators turned the sites themselves into factories, organizing materials and workers according to the logic of the assembly line.

Some of the contractors that built the Great War cantonments, for instance, set up sawmills on site and divided each task into multiple simple steps, each to be completed by a different worker. In July of 1917 a reporter for the *Christian Science Monitor* described the scene at Camp Devens's rail yard:

> [Lumber] is taken off the car and cut with but two men required as passers, one to lift the boards from the stack and[372] the other to place the timber under the hand of the man who manipulates the saw with a foot lever. A fourth man marks the specification symbols on the cut pieces and tosses them out of the shed to a fifth who catches and piles them. Seldom does more than a single pile accumulate at each shed, so frequent are the trips of the motor trucks and delivery wagons to the dozens of spots where the buildings are going up simultaneously.

The camp's contractor planned to bring in an automatic wood cutter and sorter, to sit on its own railroad siding. "Lumber will be thrown off the cars directly upon the endless belts, which will carry the timbers up into the machine, where they will be cut, sorted, and tossed out into piles on the other side," the reporter explained. The same reporter also observed a team of

[372] "Big U.S. Camps Show Activity," *Christian Science Monitor*, July 16, 1917.

men laying a wooden floor in a drill hall. There were thirty workers nailing simultaneously, each responsible for only a small section of the floor. A separate group of ten men carried boards back and forth from the stockpile to the nailers, so that the latter could remain in one place, hammer in hand (see figure 4.3).[373]

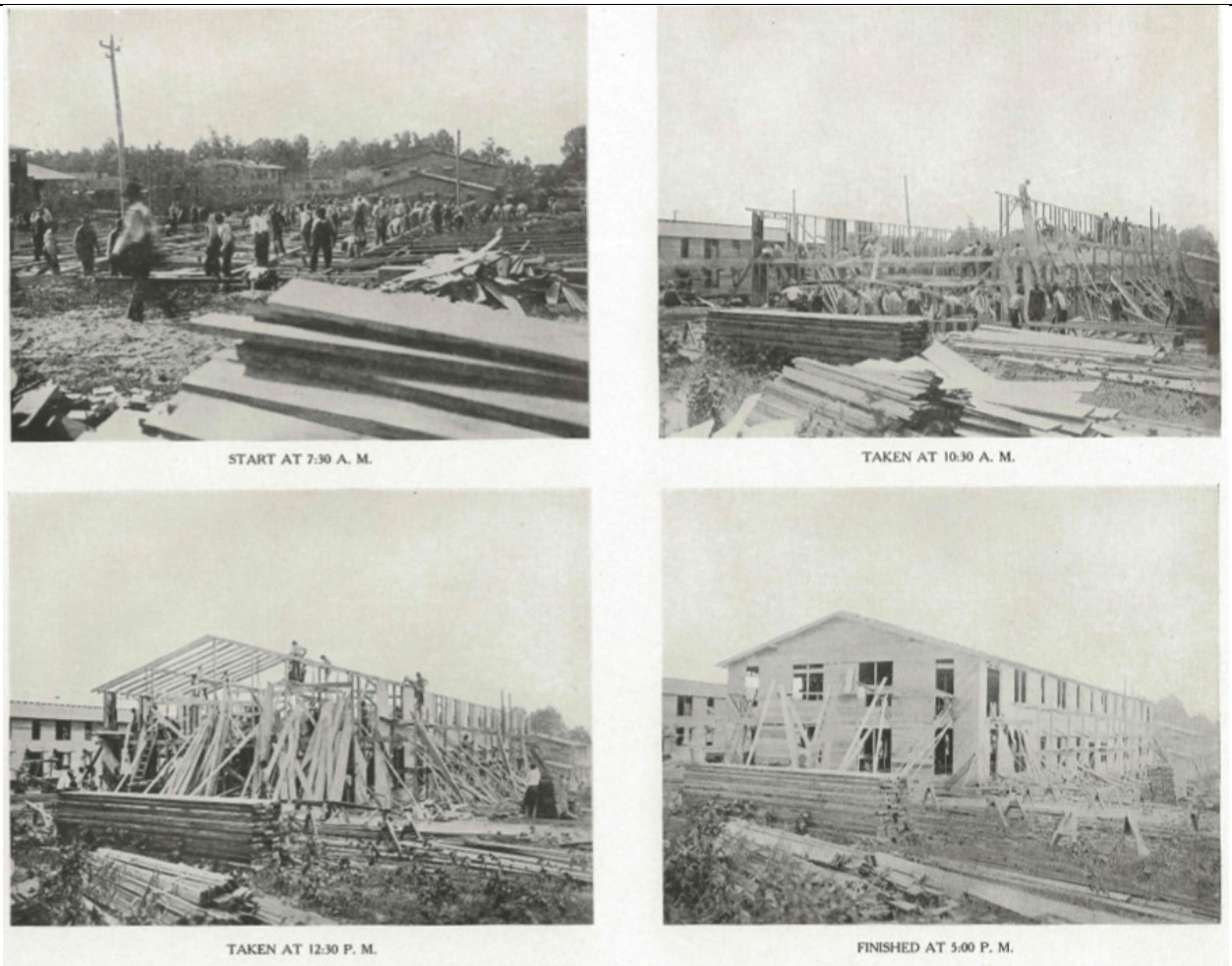

Figure 4.3: Construction of World War I Barracks Using Mass-Production Methods. Published in *National Army Cantonments: Plans and Photographs, June 1918* (U.S.A.: Construction Division, War Department, 1918)

[373] Ibid.

For the OQMG, success stories like Camp Devens's made the bulk savings offered by prefabricators less attractive. "It appears that prefabricated housing is economical only when great volume is considered, the Chief of the OQMG's Engineering & Design division wrote in January of 1941. "However, where large camps are constructed, contractors are setting up their own mills on the site thereby going into mass production of the various units needed for the construction, in accordance with standard plans." Not only did this method, too, save money, but it also eliminated the distribution problem prefabricators faced.[374]

When it came time to actually build American camps for the Second World War, speed, and not savings, reigned supreme. The Selective Training and Service Act of 1940 had specified that adequate stateside accommodations had to be available *before* draftees were sworn in. And while the OQMG had failed to come to any consensus regarding prefabrication, it had in the meantime spent months revising the World War I cantonment plans for reuse.[375]

The plans first developed by the OQMG, known as the 700 Series and approved in June of 1940, were similar in many ways to the 600 Series used during World War I. They did incorporate technological upgrades, including indoor latrines and showers, termite shields, and central heating. The 700 Series also specified concrete foundations instead of the wooden piers used during World War I.[376]

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[374] Chief, Engineering & Design to Chief, of the Construction Division, "Prefabricated Housing," January 18, 1941, 1. 600.1 Prefabricated Bldgs 1937. GCSF, 1936-45. RG 92. NACP.

[375] In fact, the World War I plans had been lost. Instead, the head of the Quartermaster Corps's Construction Division assembled OQMG veterans to reconstruct the drawings from memory. Diane Shaw Wasch and others, *World War II and the U.S. Army Mobilization Program: A History of 700 and 800 Series Cantonment Construction*, ed. Arlene R. Kriv (Department of Defense Legacy Resource Management Program project 91-0018, 1991), 7, http://aec.army.mil/usaec/cultural/docs.html (accessed November 1, 2012).

[376] Fine and Remington, *The Corps of Engineers*, 116-7; Wasch, *World War II and the U.S. Army Mobilization Program*, 12.

The 700 Series plans were reviewed by Chicago architects Halberd & Root, following accusations of Army favoritism towards the lumber industry. Holabird & Root found little to criticize, and notably did not suggest factory-fabricating any of the building's components. The firm did, however, suggest reconsidering the use of steel or tile in place of wood. Faced with the prospect of changing materials on the hundreds of projects underway, the Quartermaster Corps elected to put the proposal on hold until the next construction push.[377] In December 1940 the plans were revised by Los Angeles architect George Edwin Bergstrom, with the result known as the 800 Series. Bergstrom's plans, though superior in structural strength, still utilized wood and were highly similar to the 700 Series plans; one of the criticisms directed against the 800 Series was that its major innovations had already been integrated into the structures recently built under the 700 series plans.[378]

The preexistence of the 700 Series (later, 800 Series) plans combined with the OQMG's reluctance to embrace prefabrication to determine that the major training camps of World War II would be built on site, in wood. In keeping with tradition, the Quartermaster Corps and its civilian contractors utilized mass-production methods wherever possible to save both money and time. For example, the OQMG adjusted its specifications to take advantage of surpluses. In one case, the office reworked the mobilization plans to accommodate a surfeit of 10'-0'' boards. When the surplus lapsed, the plans were changed back.[379]

The private firms responsible for on-site construction introduced further innovations on the ground. Foremen divided their men into teams, each responsible for a particular aspect of the

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[377] Fine and Remington, *The Corps of Engineers*, 172; Wasch, *World War II and the U.S. Army Mobilization Program*, 38-9.

[378] Wasch, *World War II and the U.S. Army Mobilization Program*, 39-41, 50.

[379] Ibid., 29.

work. This human assembly line would move from building to building throughout the side, performing the same particular job each time.

Workers at Camp Blanding and at five other cantonments set up mills for cutting lumber on site; the Camp Blanding crew also experimented with partial prefabrication, building each structure in sections. The W. E. Kier Construction Company mechanized its operation, delivering materials and tools by truck to each building site.[380]

Thus the Army soldiers who went abroad to fight Germany and Japan left not from factory-built training camps, but from a more familiar landscape: soldier-cities of wooden buildings put together by hand, with the help of mass-production methods transferred to the job site. And many of the men and women who were lucky enough return home settled in similar environments, massive developments of wooden buildings constructed using a combination of traditional methods and assembly-line techniques. But the latter were not training camps; they were, rather, one of the most significant architectural inventions of the postwar period: the large-scale suburbs of the late 1940s and early 1950s.[381]

Mass Production and the Mid-Century Suburb

That the mid-century suburbs resembled the Army camps of the Second World War is not an accident. At least one of the builders behind the postwar suburban boom honed his skills in

[380] Fine and Remington, *The Corps of Engineers*, 234-5; Wasch, *World War II and the U.S. Army Mobilization Program*, 30-31.

[381] Wasch and her colleagues made this point in *World War II and the U.S. Army Mobilization Program*, 62: "These structures represented a building technology that would soon sweep the country . . . . Millions of veterans would still return home with the expectation that they too would be able to achieve the American dream, constituted primarily by home ownership. And, with help from the GI Bill, many of them would purchase a home in the new suburban developments springing up all over the country that were built in a similar manner to their old army barracks. If nothing else, the pressure of mobilization helped give birth to a mass construction industry that would shape the character of American life in the postwar period."

military construction. William Levitt of Levitt & Sons built Navy housing both in Norfolk (in 1942, with the family firm) and overseas, after he joined the Seabees, the Navy's engineering corps.[382]

Little is known about Levitt's tenure with the Seabees (1943-1945), but Levitt & Sons built its Virginia development, Oakdale Farms, using mass-production methods. The project represented a departure for the firm, which before the war had specialized in medium and large homes on Long Island and in Westchester County[383], building no more than 200 in a single subdivision.[384] At Oakdale Farms, in contrast, the Levitts built 2,350 homes. They used precut lumber to minimize labor, and distilled the process of building each house into 27 discrete tasks, each to be performed by a single laborer.[385]

When William Levitt and his brother, Alfred, unveiled their first massive subdivision, Levittown, New York, in 1947, contemporaries hailed the builders' use of mass-production techniques. Though the Levitts had opted for on-site construction over factory fabrication, they created an assembly line of workers on the home lots, churning out one house every sixteen minutes. The Levitts' key to speed was taken directly from their Norfolk experience: they again

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[382] John C. Massey and Shirley Maxwell, "A Tale of Three Levittowns," *Old House Journal* 35, no. 3 (May/June 2007): 72, http://books.google.com/books?id=INMXd8Sho0UC (accessed November 1, 2012).

[383] "Levitt to build Norfolk Housing," *New York Times*, February 8, 1942; The firm had built only 2000 houses in total between 1934 and 1941. Peter S. Reed, "Enlisting Modernism," in *World War II and the American Dream: How Wartime Building Changed a Nation*, ed. Donald Albrecht (Cambridge, MA: MIT Press, 1995): 30.

[384] Jackson, *Crabgrass Frontier*, 234.

[385] Reed, "Enlisting Modernism," 30-1; The Levitts followed Oakdale farm with contracts for war-worker housing in Portsmouth, Virginia and for war-worker barracks in Pearl Harbor. Jackson, *Crabgrass Frontier*, 234.

divided the construction of each house into 27 jobs, each performed—house after house after house—by a single worker[386]

Historians have attributed the Levitts' mass-production system to their admiration of automobile manufacturers; William himself called Levitt & Sons the "GM of the Building Industry."[387] But while Fordist production may have indeed been an inspiration, the most direct influence on the Levitts' methods seems to have been much more banal. Levitt & Sons' first large homebuilding project, Oakdale Farms, was born of the same circumstances that shaped Army construction: uncertainty about the usefulness of factory fabrication methods; the need to reduce costs to fit a government budget; a labor shortage that made streamlining essential; and, most of all, a pressing need for speed. The system worked. So well, in fact, that the Levitts transferred the system to the private market just a few years later.

The Army's rejection of factory-fabricated housing thus helps to explain a larger puzzle: the failure of prefabrication to noticeably impact the mass housing market. Problems with quality, cost, and labor plagued early-twentieth century efforts at prefabrication to the extent that no one method was tried on any large scale before World War II. When the war ushered in a housing crisis—first in the Army and around war plants, and afterwards in the civilian cities and towns to which veterans flocked in droves—builders turned to tried-and-true techniques rather than take a risk on the unknown. The factory-built home was relegated to historical curiosity; the built-in-place tract house, on the other hand, would become the central symbol of late-twentieth century middle-class culture.

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[386] Massey and Maxwell, "A Tale of Three Levittowns," 72. Massey and Maxwell cite 26 steps. Jackson counts 27 (*Crabgrass Frontier*, 234).

[387] Massey and Maxwell, "A Tale of Three Levittowns," 72.

Conclusion

Histories of prefabricated housing in the United States have tended to focus on the success stories rather than the failures. And, indeed, there were successes. Sears, Roebuck and Company, which introduced its first book of house plans in 1908, was the most profitable of dozens of early-twentieth century kit house manufacturers. Customers chose from a variety of house sizes and styles, and upon payment received everything needed for the house's construction, from precut boards to nails, finished millwork, paint, shingles, and windows. Modeling itself on the Ford Motor Company, Sears, Roebuck vertically integrated its kit-house production, buying facilities to manufacture the house parts rather than hiring other firms to cut the lumber and produce the finishings.[388]

In the strictest sense, Sears' and other firms' kit houses were not prefabricated. Rather than being assembled in a factory and shipped to the site, or even—except in a few cases—relying on panelized construction to minimize on-site labor, the kit houses were shipped in pieces by rail and put together by the homeowner or a local carpenter. The savings effected by the Sears, Roebuck system nevertheless indicated to many the promise of factory fabrication.

The hope that prefabrication would reduce the cost and construction time of housing persisted into mid-century. Nearly 200,000 Quonset huts, the semi-cylindrical steel and wood[389] structures developed by the United States Navy in 1941, sprung up at home and overseas. The shed-like buildings used for everything from military hospitals to chapels. Many of the Quonsets located abroad were shipped home after the war for recycling as emergency housing.[390]

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[388] Amanda Cooke and Avi Friedman, "Ahead of Their Time: The Sears Catalogue Prefabricated Houses," *Journal of Design History* 14, no. 1 (2001): 53-70.

[389] Reed, "Enlisting Modernism," 25.

[390] Ibid., 25, 27.

While Levitt & Sons opted for built-in-place wood-frame houses, other war-housing contractors experimented with prefabrication. Vernon DeMars, who designed housing and community buildings for workers at Vallejo, California, had worked before the war for the Farm Security Administration (FSA). In at least one of his FSA projects, at Yuba City, California (1940), he experimented with Cemesto-brand composition boards as an alternative to traditional sheathing materials. At Vallejo, he made further use of prefabricated house parts, building with factory-made glued plywood panels that were shipped to the site, then assembled horizontally before being levered into place.[391]

Numerous prefabrication companies also contributed to the war effort. The *Architectural Forum*'s "Directory of Wartime Prefabricators"[392] listed twenty-two manufacturers as having produced either war-worker or military housing. A sampling of the companies represented is as follows: Alladin Co. of Bay City, Michigan, a kit-house manufacturer, had shipped buildings for military use to Alaska, the Southwest Pacific, Iceland and Africa. Celotex Corp of Chicago, the holder of the Cemesto patent, had seen its product used to build dormitories, Coast Guard barracks, and officers' quarters. Green Lumber Company of Laurel, Mississippi, a CCC contractor, was said to be producing 20,000 square feet of barracks per day. Gunnison Housing Corporation, of New Albany, Indiana, had been busy making plywood airplane wings as well as stressed-skin hutments. The John A. Johns Contracting Corporation of Brooklyn had produced at least 5,000 houses for war workers, and had supplied various building parts including prefabricated trusses to the Army. Toledo, Ohio's Libbey-Owens Ford Glass Company had converted one of its factories to the manufacture of plywood-panel houses for war housing. T.

[391] Ibid., 9, 11.

[392] "A Directory of Wartime Prefabricators," *Architectural Forum* 78 (April 1943): 79-86.

C. King Company of Anniston, Alabama, another CCC contractor, had built 2,000 units of war-worker housing, and had 500 more on order. Plywood Structures, of Los Angeles, had built 6,400 units of War-Worker housing plus prefabricated dormitories and barracks.

The Army made widespread use of factory-fabricated housing at its Manhattan Project installations, including Oak Ridge, Tennessee (see chapter 5). The 9,360 units still standing at Oak Ridge in 1948 included 3050 in single- and four-family houses built of Cemesto board (see figure 4.4); 113 in fiberboard apartment houses; 3365 in flattop sectional plywood houses first developed by the TVA (see figure 4.5); 740 in prefabricated-plywood duplexes known as "Victory Cottages"; and 435 plywood hutments.[393]

[393] Skidmore, Owings & Merrill, *Report to the Atomic Energy Commission on the Preliminary Master Plan, Oak Ridge, Tennessee* (*Preliminary Master Plan*) (New York, March 1948), 16.

Figure 4.4: John B. Pierce Foundation/SOM Prefabricated Cemesto House. Published in "Houses: John B. Pierce Foundation," *Architectural Record* 89 (May 1941): 63.

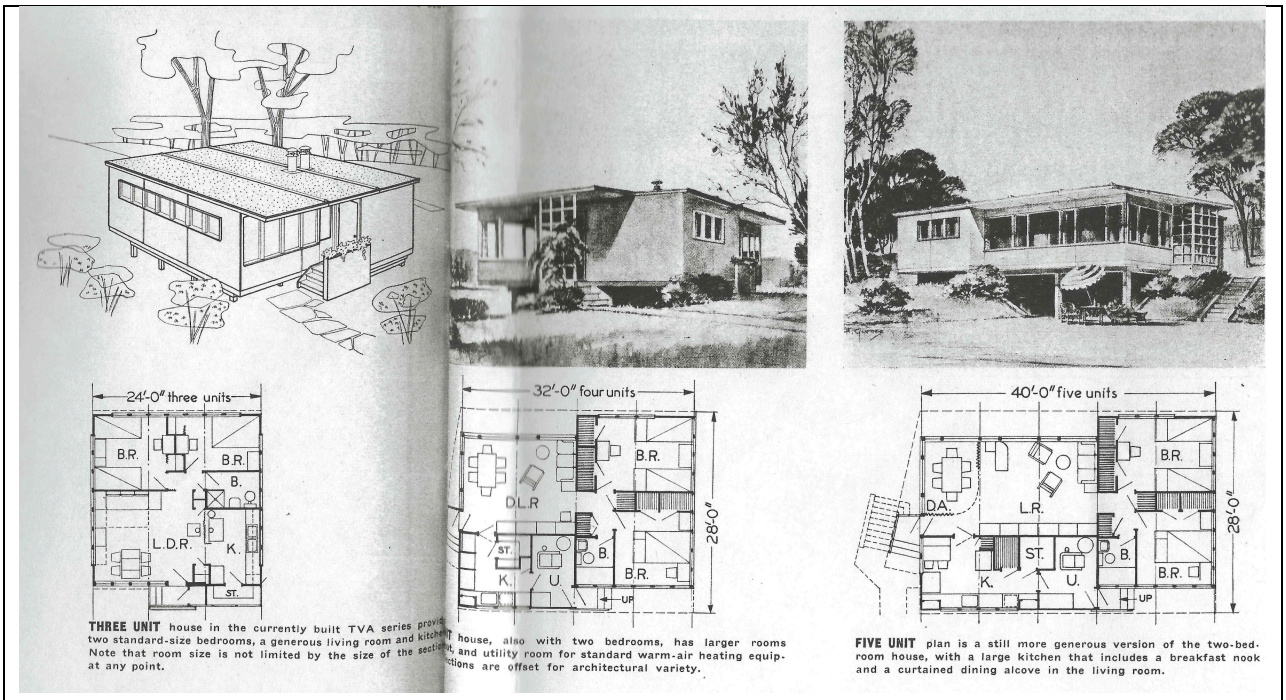

Figure 4.5: Prefabricated Houses Designed by the Tennessee Valley Authority. Published in "TVA 'Sectional' Houses," *Architectural Forum* 80 (March 1944): 75.

Experiments with prefabricated housing continued after the war, as architectural historian Peter S. Reed details in his article on World War II and modern architecture.[394] Just after Japan's surrender, architect R. Buckminster Fuller modified his cylindrical Dymaxion Deployment unit, modeled on steel grain bins, for use as a civilian home. The Dymaxion Wichita house was manufactured by Kansas's Beech Aircraft, which during the war had built bombers for the military. It failed to gain popularity with suburban home-seekers.[395] Factory-fabricated house parts also made an appearance in Charles and Ray Eames's Case Study house #8 (1949), a steel-frame structure with Cemesto wall panels and Ferroboard ceilings.[396]

[394] Reed, "Enlisting Modernism."

[395] Ibid., 27.

[396] Ibid., 32.

Probably the best known of the prefabrication systems debuting after the war was the enameled-steel Lustron home, of which 2500 were built in the United States and South America between 1948 and 1950.[397]

But despite the participation by prefabricators in housing production both during and after the war, the postwar housing boom was in the main characterized by mass production on site rather than in the factory. The story of the Army's rejection of prefabrication in favor of built-in place housing helps to explain why.

Before and during the war, OQMG studied a number of factory-fabricated housing systems. But despite pressure from prefabricators and the General Staff to adopt one or more such designs, OQMG architects and engineers opted to go ahead with conventional construction for both permanent and temporary housing needs. The disadvantages of prefabricated housing were many; the most important included questions about the structural integrity and durability of factory-fabricated designs, elevated construction costs, and the duplication of labor in the factory and on site.

The first housing developments of the postwar period went up in conditions similar to those under which the Army operated: a severe housing shortage meant that the most successful builders would be those who could construct high-quality houses in a short amount of time at minimum cost. As merchant builders like William Levitt perfected the application of assembly-line processes to the building site, the gap in quality and capacity between conventional builders and prefabricators widened. Companies entering the home-building market in the 1950s and

[397] Thomas T. Fetters and Vincent Kohler, *The Lustron Home: The History of a Postwar Prefabricated Housing Experiment* (Jefferson, NC: McFarland, 2006).

later shied away from prefabricated construction exactly because the most profitable among their forerunners had proven the ability of conventional methods to adapt to changing conditions.[398]

The results of the Army's experiments in prefabrication thus predicted a later rejection of factory fabrication by the suburban builders of the postwar era. Though the Levittowns and other developments that characterized the American built environment of the 1950s through 1980s did not on the surface resemble wartime Army barracks, their logical foundation was the same.

[398] Other factors, too, ran against prefabricated housing, including the difficulty of designing for multiple sites and building codes, and the preference among middle-class customers for nostalgic designs.

Chapter 5: The Atomic City is a Suburb: Antiurbanism and the Master Plan for Oak Ridge

Introduction

In 1942, the Army Corps of Engineers—the Quartermaster Corps' successor in Army construction oversight—embarked on a community-building project that, while unprecedented, nevertheless drew on decades of experience constructing Army posts. The Engineers' charge was to create, as quickly as possible, an entire secret city in the hills of northeastern Tennessee. The purpose of the city was the development of an atomic bomb; as such, it would contain both the technical facilities for atomic research and production, and housing and community services to support the thousands of civilian employees involved in the project.

To accomplish the building of Oak Ridge, the Manhattan Engineer District followed a familiar pattern. It brought in a civilian architectural and city-planning firm, Skidmore, Owings & Merrill, to design a town just nice enough to recruit and retain the necessary atomic workers at minimal cost. The planners transformed what for the Corps of Engineers was a military necessity into an opportunity to realize certain theoretical planning principles, particularly the Garden City model of low-density development first popularized in England at the turn of the twentieth century.

Upon the war's end, the Corps of Engineers transferred responsibility for the town's management, as well as ownership of all its property, to the civilian Atomic Energy Commission

(AEC). The AEC, in turn, embarked on a project to dispose of all of the town's non-plant property, and to support Oak Ridge's residents in achieving self-government. As a part of this postwar mission, the AEC hired Skidmore, Owings & Merrill to re-plan an Oak Ridge whose physical arrangement had been confused and compromised by wartime exigencies.

Skidmore, Owings & Merrill published its Master Plan for Oak Ridge in December 1948. The document epitomizes the anti-urban sentiment that pervaded American culture during the immediate postwar period. Specifically, two aspects of the Master Plan embodied an anti-city attitude. First was the design itself, which in its basis in Ebenezer Howard's Garden City model rejected industrial urbanism in favor of decentralized, low-density development. Second were the controls proposed by Skidmore, Owings & Merrill to insure planned growth during the transition from government to private ownership. Embracing a strategy common among suburban developers of the previous decades, Skidmore, Owings & Merrill recommended that the AEC attach deed or lease restrictions to all residential and commercial properties prior to disposal. Deed restrictions can be understood as being anti-urban on two fronts. First, deed or lease restrictions were designed to preserve the status quo at a time when continual and unstoppable change was understood to be a defining characteristic of the urban environment. Second, the particulars of the deed restrictions proposed by Skidmore, Owings & Merrill, like those of their forebears in suburban development, defined acceptable use *against* urban qualities such as density and heterogeneity (of land uses and populations both).

This chapter begins with a brief examination of American anti-urbanism at midcentury before turning to the case of Oak Ridge in particular and outlining the situation of the atomic town under AEC control. It describes the Skidmore, Owings & Merrill Master Plan within the context of Ebenezer Howard's Garden City movement and more recent manifestations thereof,

including the greenbelt towns of the New Deal. It next considers the environmental controls proposed by Skidmore, Owings & Merrill, examining the firm's rationale for advocating deed or lease restrictions and tying that choice to earlier developments in suburban history. Finally, the chapter looks briefly at the American New Town of Columbia, Maryland (1967) as the logical successor of the Master Plan for Oak Ridge.

The Suburbanization of the United States, 1945-1970

By the late 1940s, the movement of Americans from the cities to the suburbs, a movement that had begun in the 1800s as a trickle, then become a steady flow by the 1920s, appeared as an unstoppable tidal wave. World War II served as a kind of pressure cooker for the suburban dream, a time during which, though private building had ceased and families were separated by entire continents, the federal government and the home-building industry alike encouraged Americans to focus on the single-family suburban home as the prize awaiting them at the end of the conflict.[399] When that time arrived, FHA and VA insurance combined with innovations in the construction industry (see chapters 3 and 4) to catalyze an explosion of large-scale suburban developments aimed at the middle class, particularly returning vets.[400] By 1950, the suburban growth rate was ten times that of the urban rate nationwide[401]; in the three decades to follow, the suburbs would see a population gain of over 60 million.[402]

[399] Jackson, *Crabgrass Frontier*, 232.

[400] Fishman, *Bourgeois Utopias*, 175-6.

[401] Jackson, *Crabgrass Frontier*, 238.

[402] Ibid., 283.

But the postwar period was not marked just by an acceleration of existing trends. The character of the suburbs changed, too. Most notably, other land uses—retailing, manufacturing, and corporate offices—joined housing in its exodus from the urban core.[403] As the historical functions of the city center moved to the periphery, the suburb no longer depended upon the cultural and economic resources of the city. With the development during the 1950s of decentralized highways like those cross-hatching Los Angeles and Orange County,[404] the suburb lost even its physical connection to the urban center. American suburbia became an independent entity with its own logic of physical growth, one that prized dispersion and horizontal movement over concentration and verticality.

Historians and cultural critics have invented a new lexicon to describe the postwar suburban environment. Ada Louise Huxtable called the postwar suburbs "slurbs."[405] Lewis Mumford titled a section of his book, *The City in History*, "Mass suburbia as anti-city."[406] Robert Fishman called them "technoburbs."[407] Joel Garreau popularized the term "edge city" in 1991.[408] The particular terminology in play matters less than the conclusion shared by all these observers: that in the period after 1945, the American built environment changed in a way that rendered the old conceptual triad of rural/suburban/urban meaningless.

Oak Ridge in Transition

[403] Ibid., 266.

[404] Fishman, *Bourgeois Utopias*, 173.

[405] Ibid., 203.

[406] Mumford quoted in Jackson, *Crabgrass Frontier*, 270.

[407] Fishman, *Bourgeois Utopias*, 184.

[408] Garreau, *Edge City: Life on the New Frontier* (New York: Doubleday, 1991).

Oak Ridge was unusual among the suburbs built in the immediate postwar years in that it, first, began as a military installation, and, second, was planned not by a real-estate developer but by a professional design firm. It nonetheless is an instructive example of postwar antiurbanism, in part exactly because of its status as a community planned on behalf of the federal government. For the Atomic Energy Commission, eager to privatize Oak Ridge and thus relinquish its responsibilities as town landlord and governor, consciously shaped Oak Ridge in the suburban image it believed was most likely to be embraced by current and future residents.

Oak Ridge was first planned during the war, when it was a secret, gated, Army Corps of Engineers-run installation focused on the development of an atomic weapons system. The Corps of Engineers originally selected the Boston contracting firm of Stone & Webster to design and manage construction of all of Oak Ridge's facilities. Stone & Webster had been regularly involved in military post construction since World War I, when the company oversaw building at Camps Travis and MacArthur, and at Kelly Field #2 and Rich Field.[409] Dissatisfied with the firm's initial plan for a town of 13,000 and a trailer camp of 1,000, the Engineers turned to the John B. Pierce Foundation.

The John B. Pierce Foundation, a private foundation that funded housing research (see chapter 4), in turn recommended the architectural firm of Skidmore, Owings & Merrill (SOM), with which the Pierce Foundation had collaborated in the past.[410] In February of 1943, the Corps of Engineers decided in favor of the SOM design[411]. The plan called for the grouping of

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[409] Stone & Webster, *Building American Military Camps* (Boston: Stone & Webster, 1918).

[410] As in, for example, the development of Cemesto. See chapter 4.

[411] According to an Army history of the MED, the move away from Stone & Webster and towards SOM was based primarily on the belief that, without a townsite to worry about, Stone & Webster would be better equipped to design and build the plants. According to Charles W. Johnson and Charles O. Jackson, SOM's was a clearly superior plan. Stone & Webster's plan, they write, was a jumble of unrelated residential areas, with too-small blocks and little attention paid to problems of grading and drainage. In particular, the eastern section of the town was divided into a

residential housing into size-limited neighborhoods, each with its own elementary school and shopping center. A larger town center, surrounded by apartment buildings and dormitories for childless couples or single workers, would include additional shopping and cultural facilities.[412]

SOM's design was soon torn apart by the exigencies of the atomic weaponry program. The wartime Oak Ridge was in fact built in three phases, each one more hurried and thus less carefully coordinated than the last. "[T]he requirements grew and ink was scarcely dry on one set of plans before they had to be reopened and extended," recalled SOM designers in their 1948 Master Plan for the city's re-planning.[413] The first phase of construction, comprising the plan approved in February 1943, included 3,050 Cemesto houses, three apartment buildings, 14 dormitories, 980 hutments, and 1,071 trailers, as well as one high school, three elementary schools, a hospital, four shopping centers, and various service buildings.[414]

By the end of summer 1943, plant operators realized they needed far more employees than they had first anticipated. SOM accordingly expanded its plans to accommodate 42,000 total residents. The second phase of construction added 4,793 family units (including prefabricated single-family houses, panelized duplex houses, demountable multi-family houses), 55 dormitories, 2,089 trailers, and 391 hutments to the housing mix. A separate cantonment area included 84 hutments, 42 barracks and service buildings, and 52 units' worth of hutment

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conventional grid, while the remaining area was given a more informal treatment. Paul Kesaris, ed., *Clinton Engineer Works: Central Facilities*, book 1, vol. 12, *Manhattan Project: Official History and Documents* (Washington, DC: University Publications of America, 1977), microfilm reel 4, part 2, 4.5-4.6. Charles W. Johnson and Charles O. Jackson, *City Behind a Fence: Oak Ridge, Tennessee, 1942-1946* (Knoxville: University of Tennessee Press, 1981), 15.

[412] Skidmore, Owings & Merrill, *Preliminary Master Plan*, 9; Kesaris, ed., *Clinton Engineer Works*, 4.2.

[413] Skidmore, Owings & Merrill, *Report to the Atomic Energy Commission on the Master Plan, Oak Ridge, Tennessee* (*Master Plan*) (New York, December 1948), 3.

[414] Kesaris, ed., *Clinton Engineer Works*, 4.2.

apartments. In addition to the extra housing, construction crews doubled the size of the high school, built two additional elementary schools and expanded others, expanded the hospital building, and built new or added to existing commercial and service facilities.[415] The expansion of the townsite area defeated even some of the settlement's most basic design principles; the Gamble Valley trailer park, for instance, was located in what was meant to be an empty buffer zone between the Y-12 plant and workers' housing.[416]

One year later, in late 1944, the Corps of Engineers grew Oak Ridge yet again. The third, and final, wartime construction phase was again a response to plant expansion and revised personnel estimates. Workmen built an additional 1,300 prefabricated family units and 20 dormitories, and brought in 744 more trailers. The town's schools were again built out, and crews added onto the hospital one more time. Other service buildings were constructed, and many streets were repaved or otherwise improved.[417] SOM's organizing principle of expansion by self-contained neighborhoods dissolved under such pressure. And while the Army and SOM did their best to beautify the new developments, providing for landscaping and building ornamental pavilions and bridges,[418] the physical chaos of the later building phases was soon echoed by social unrest. Historian Peter Bacon Hales writes this about all three of the atomic cities, including Oak Ridge: "As plans became realities, and blueprints turned into communities, the messy stuff of American community life—everything from noisy town meetings at Los

[415] Ibid., 4.2-4.3.

[416] Peter Bacon Hales, *Atomic Spaces: Living on the Manhattan Project* (Urbana: University of Illinois Press, 1997), 108.

[417] Kesaris, ed., *Clinton Engineer Works*, 4.3-4.4.

[418] Charles O. Jackson and Charles W. Johnson, "The Urbane Frontier: The Army and the Community of Oak Ridge, Tennessee, 1942-1947," *Military Affairs* 41, no. 1 (February 1977): 11.

Alamos to strikes, rapes, and murders at Hanford and Oak Ridge—came increasingly to dominate the attention of District officials and occupants alike."[419]

SOM had originally planned for a population of 13,000, but in June of 1945 the city of Oak Ridge reached a peak five times that—75,000. Some 28,834 of the residents were housed in single- and multi-family houses, including apartment buildings; 1,054 Oak Ridgers lived in pre-Manhattan Project farmhouses; 13,786 employees lived in the dorms; and 31,257 residents were installed in barracks, hutments, and trailers.[420] Oak Ridge had grown to become Tennessee's fifth largest town, and the second largest single customer of the TVA.[421] The physical coherence of the small city suffered accordingly. As historians Charles Johnson and Charles Jackson write, the town's "overall planned unity had largely disappeared in favor of a rag-tag mixture" of housing types.[422] SOM designers put the result in urban-planning terms: while the areas first built upon "have an individual neighborly kind of personality" resembling idealized small-town life, they wrote, in later phases "the usual jumbling of land uses of the average city occurred and the boom town or war-time physical aspect became evident."[423]

The population of Oak Ridge dropped after war's end, dipping to 42,465 by the end of 1946. But the town's spatial disarray persisted, and solving the planning problem became a high-priority item for the Atomic Energy Commission, to which the Corps of Engineers transferred control over the atomic energy program on January 1, 1947. Bringing the built environment of Oak Ridge up to the standard first set by SOM was one major aspect of the

[419] Hales, *Atomic Spaces*, 112-3.

[420] Johnson and Jackson, *City Behind a Fence*, 104.

[421] Kesaris, ed., *Clinton Engineer Works*, 1.4.

[422] Jackson and Johnson, "The Urbane Frontier," 11.

[423] Skidmore, Owings & Merrill, *Preliminary Master Plan*, 9.

AEC's postwar agenda: to enable the communities it controlled to become as "normal" as possible without disrupting atomic production. For the AEC, making Oak Ridge normal meant relinquishing ownership of residential and commercial property; aiding Oak Ridgers in a bid to incorporate the town and, thereafter, become financially self-sufficient; and replacing the helter-skelter residential settlements of Phases 2 and 3 with well-planned, permanent neighborhoods.

Thus as one part of a larger transition program, which involved drafting disposal legislation, surveying residents, and commissioning reports on the future of Oak Ridge, the AEC asked SOM to prepare a new Master Plan for Oak Ridge assuming a conversion to private property ownership and self-government. Like the firm's 1943 plan for Oak Ridge, the 1948 scheme envisioned the Tennessee atomic town not as an industrial city, but as a Garden City planned according to principles first articulated by Englishman Ebenezer Howard in 1898.

The Garden City and the New Deal Greenbelt Towns

The Garden City was profoundly anti-urban. Like contemporary planners including Frank Lloyd Wright and Le Corbusier, Ebenezer Howard feared the unchecked development of the industrial city and its accompanying social problems, including extremes of wealth and poverty and cultural conflicts. While he was not a pure environmental determinist, as the political and economic program that accompanied his description of the Garden City's built environment makes clear, Howard believed that reconfiguring the spaces of industrial capitalism was a necessary component of, in his words, "a peaceful path to real reform."[424]

[424] Robert Fishman, *Urban Utopias in the Twentieth Century: Ebenezer Howard, Frank Lloyd Wright, and Le Corbusier* (1977; repr., Cambridge, MA: MIT Press, 2002), 4-5; "A Peaceful Path to Real Reform" was the subtitle of the 1898 edition of Howard's book.

Howard came of age in the English Radical movement of the 1870s and 1880s, which prized democracy and cooperation as solutions to contemporary society's ills. The Radicals were suspicious of both big government and big capital, and instead favored voluntary cooperation among individual citizens.[425] Howard was also influenced by Edward Bellamy's *Looking Backward*, published in 1888, which pictured the city of Boston in 2000 as a socialist paradise in which private property had been nationalized and inequality abolished. The city's built environment had also been reformulated to support the new politico-economic order.[426]

But while Howard embraced Nationalism, the American political movement spawned by Bellamy's book, he took issue with its advocacy of state ownership of industry and private property, as well as with the centralized urban form pictured in *Looking Backward*.[427] Urban historian Robert Fishman writes: "The Garden City was not the simple result of Bellamy's influence on Howard. Rather, it grew out of Howard's attempt to correct Bellamy's authoritarian bias and to devise a community in which social order and individual initiative would be properly balanced."[428]

Thus Howard's Garden City, which he published in 1898 and again in 1902, was not a city per se, but nor did it represent a nostalgic return to a pre-capitalist rural lifestyle. Instead, Howard proposed combining the best features of urban and rural communities into a town-country hybrid, as pictured in his Three Magnets analogy (see figure 5.1). Howard diagrammed the Garden City as a circle (see figure 5.2), with a civic center at its heart (comprising a

[425] Fishman, *Urban Utopias in the Twentieth Century*, 29-31.

[426] Ibid., 33-34.

[427] Ibid., 36.

[428] Ibid.

community park, cultural institutions, and a shopping mall), outside of which were residences, then industrial properties, then an agricultural greenbelt that would protect against sprawl. But while the circular diagram implied a centralization of social and economic life along the lines of the contemporary industrial city, Howard in fact intended for the real center of life in the Garden City to be the neighborhood or ward.

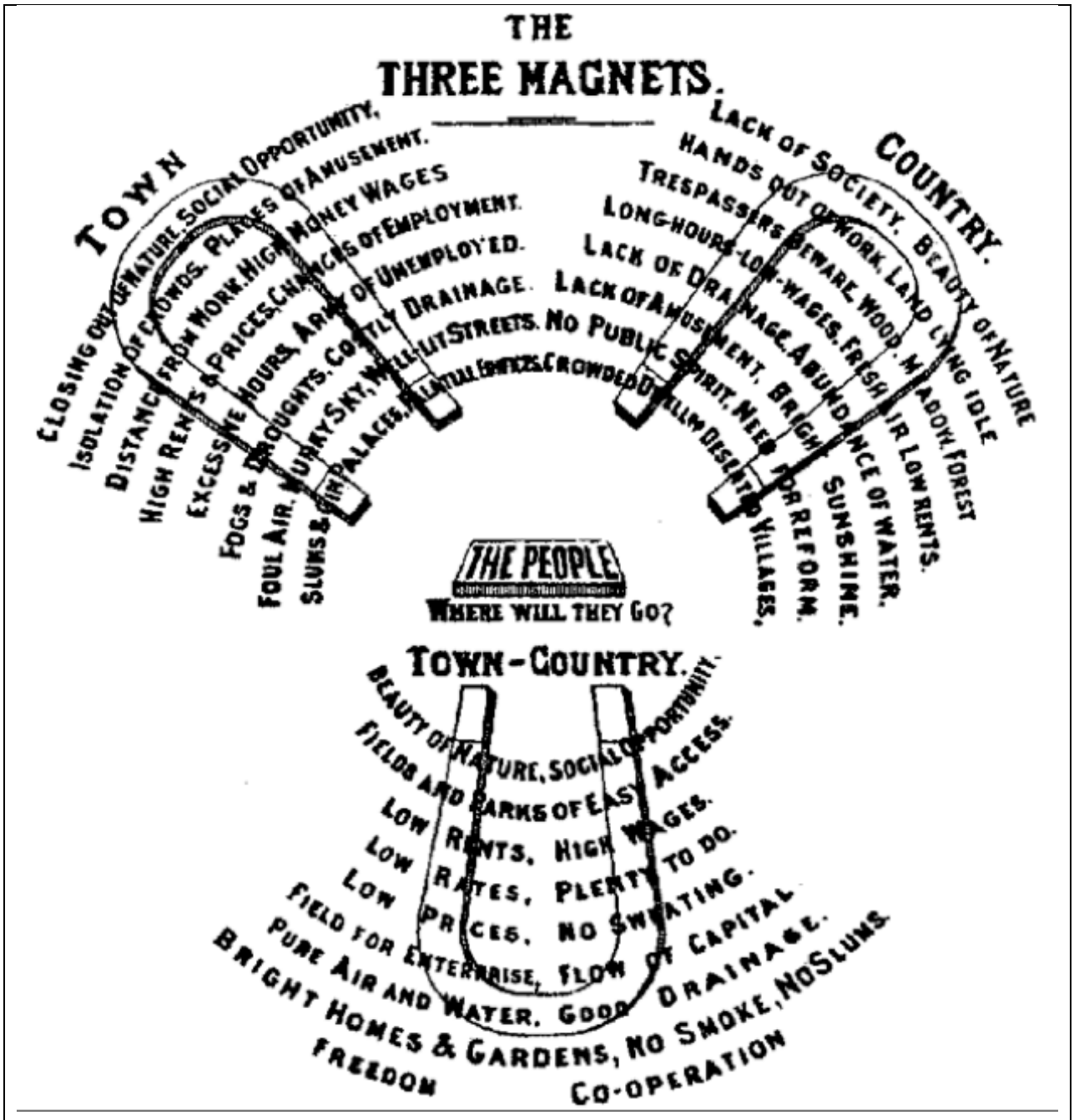

Figure 5.1: Ebenezer Howard, Three Magnets Diagram. Published in *Garden Cities of Tomorrow*, http://www.library.cornell.edu/Reps/DOCS/howard.htm

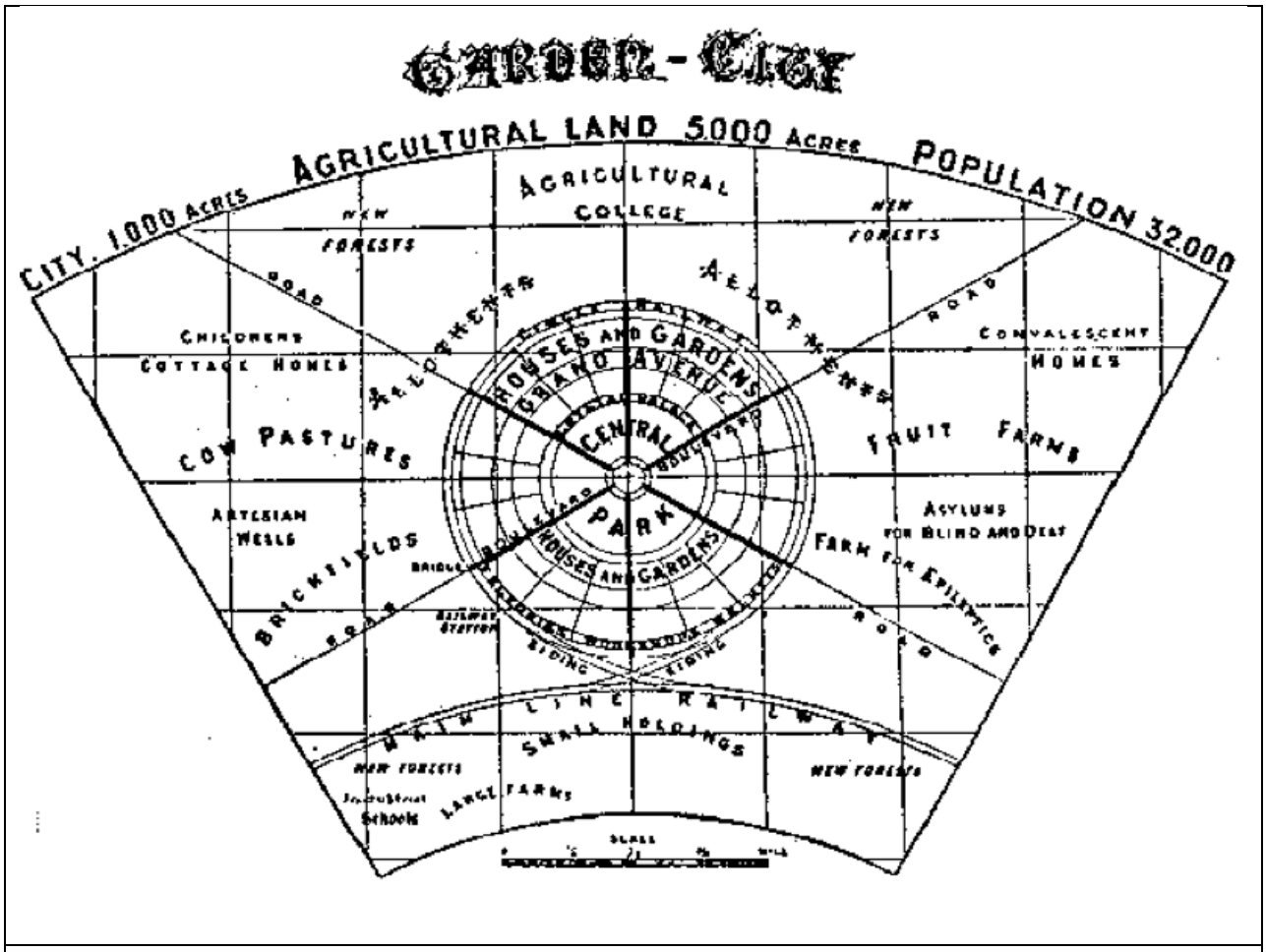

Figure 5.2: Ebenezer Howard, Garden City Diagram. Published in *Garden Cities of Tomorrow*.

Howard divided the Garden city into six wedges he called wards. Contained within each ward were all the functions required for daily life: industries and office buildings, houses, segments of the Crystal Palace shopping area and the town's Central Park, and—at the center of it all—a school. Thus the Garden City had not one but seven centers: the town's common civic center, plus the center of each ward, which was not a commercial or government space, but a public school.[429]

[429] Ibid., 42-4.

Howard envisioned the creation of not a single Garden City, but of an entire network of Garden Cities, each limited in population and with agricultural land separating it from the surrounding communities. On the one hand, as Howard noted, the proximity of the various Garden Cities, when connected by an efficient railway system, would give residents easy access to whatever cultural or commercial opportunities their own hometown lacked. On the other hand, the networked nature of the Garden City scheme reduced the importance of the Central City, which was to be less than twice as large as the surrounding Garden Cities (see figure 5.3). Instead of the centralized built environment of industrial capitalism, in which a few large cities' insatiable demand for manpower and natural resources left their rural hinterlands impoverished, Howard envisioned a decentralized web of Garden Cities in which no one place or person was sacrificed to the desires of another.

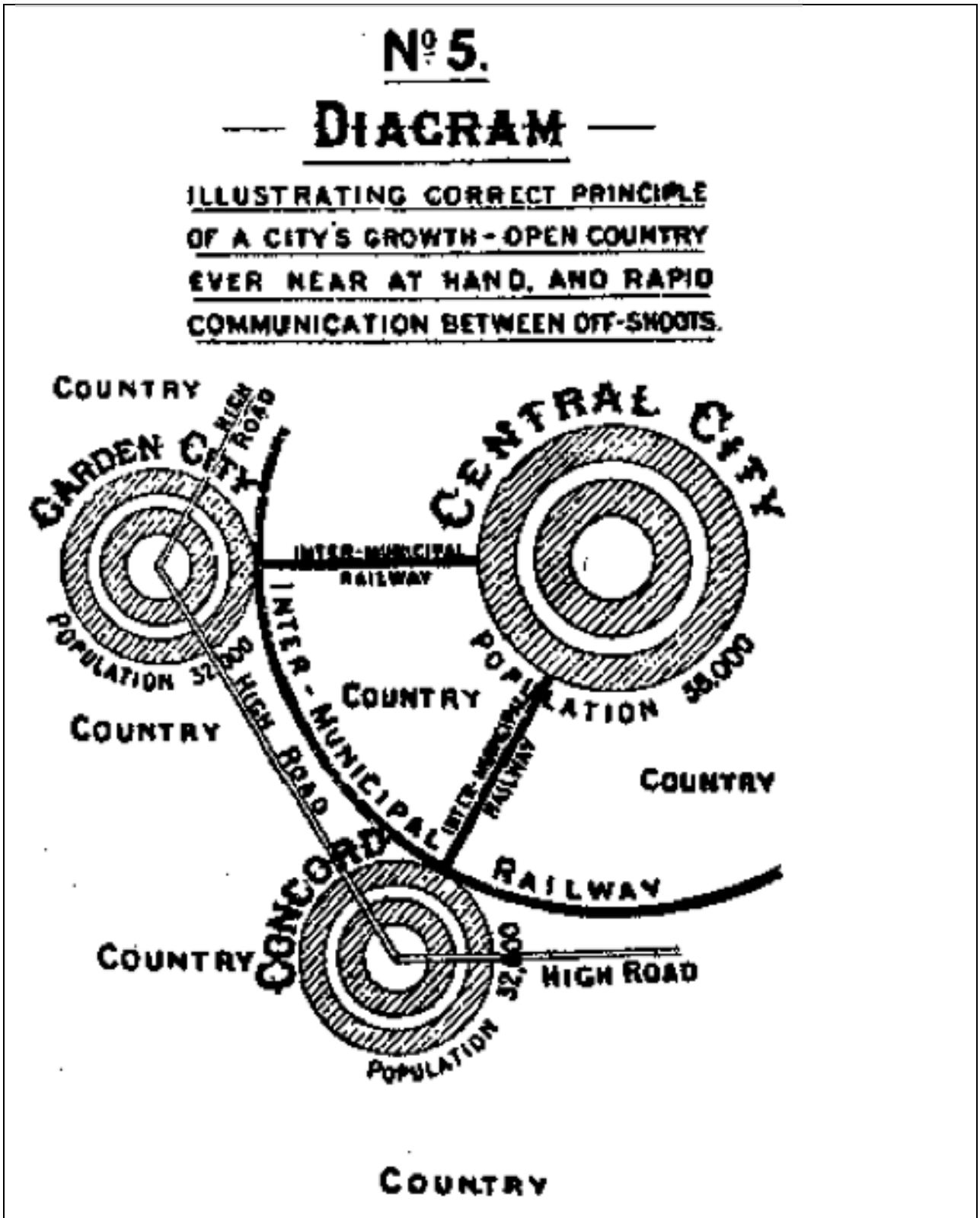

Figure 5.3: Ebenezer Howard, Growth Diagram. Published in *Garden Cities of Tomorrow*.

The Garden City diagram was only one portion of Howard's program for revolution. Equally important was the economic basis on which the Garden City was to operate. Private property ownership would be eliminated entirely; instead, the land of the Garden City would be held in trust by a group of investors who would turn it over to the community at large once rents collected by residents totaled the purchase price plus a modest return for the trustees. Eschewing government ownership of industry but equally uncertain that collectivization was the solution to every problem, Howard proposed that each industry or commercial pursuit could be either operated by a collective or privately owned.[430]

Thus Howard's Garden City subverted both the economic and the physical structures of the contemporary industrial city. For Howard, the redistribution of wealth among the populace was not enough to permanently remake society. The space of that society, too, had to be decentralized in order for "real reform" to take hold.

The failure of the Garden City movement to build actual Garden Cities during Howard's lifetime is almost as famous as the Garden City concept itself. Howard saw only two Garden Cities, Letchworth (1903) and Welwyn Garden City (1920), go up during his lifetime, and even these only partially fulfilled the Garden City mission. As Fishman details, rents in Letchworth proved too high for any but skilled laborers to live within the town's limits. And Welwyn's supporters ratcheted down their revolutionary rhetoric, and instead focused on building a pleasant, affordable community without the expectation of any broader social change.[431]

[430] Ibid., 46-9.

[431] Ibid., 74-5, 80.

Despite its lack of success as a revolutionary program, Howard's treatise on the Garden City has "done more than any other single book to guide the modern town planning movement and to alter its objectives," wrote Lewis Mumford.[432] Among the inheritors of the Garden City as a model for community design were the greenbelt towns of FDR's New Deal. Though the greenbelt program was itself incomplete, with only three towns partly built, it, too, would have a powerful legacy for American city planners, particularly during the postwar period.

The greenbelt town program was the brainchild of Rexford Tugwell, an agricultural economist and head of the new Resettlement Administration. Among the Resettlement Administration's aims was to relocate low-income residents of urban slums or failing farms to healthy, economically-viable communities.[433] The greenbelt towns were to be those communities.

The greenbelt town concept—the idea of building entire new towns rather than isolated projects to house poor Americans—attracted the attention of prominent architects including Frank Lloyd Wright, who suggested the federal government adopt his Broadacre City scheme in place of some other planning model.[434] Henry Wright and Clarence Stein, the planners of the garden suburb of Radburn, New Jersey (1929), signed on to the project as advisors.[435]

Though designs for the greenbelt cities varied according to the preferences of their planning teams, all shared a commitment three crucial characteristics of the Garden City. First, the greenbelt towns' planners were united in their commitment to keeping residential densities

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[432] Mumford quoted in Ibid., 23.

[433] Joseph L. Arnold, *The New Deal in the Suburbs: A History of the Greenbelt Town Program, 1935-1954* (Columbus: Ohio State University Press, 1971), 24-6.

[434] Ibid., 83-5.

[435] Ibid.,14.

low. According to historian Joseph L. Arnold, the three greenbelt towns actually built had densities ranging from four families per acre to 8.5 families per acre; compare these to the PWA's Harlem River Houses, which accommodated 82 units per acre.[436]

Second, each town was to be surrounded by a protected strip of open land, the greenbelt from which the program took its name.[437] As in Howard's Garden City scheme, the greenbelt would limit each town's physical growth and, in combination with prescribed residential densities, its population. In the case of the New Deal towns, the Resettlement Administration planners expected no more than 30,000 residents per town (at Greenbelt, Maryland), in some cases much fewer.[438]

Finally, at least two of the greenbelt towns would be organized around multiple neighborhood centers in addition to a single town center. Planners at Greenbrook (New Jersey, not built) and Greenbelt, taking a page out of the Radburn book, grouped houses into superblocks, at the center of which was a shared open space.[439] Multiple superblocks would combine into neighborhoods, which in turn came together to form the town as a whole. The purpose of the greenbelt towns' town centers, meanwhile, was to provide shopping and cultural facilities that would eliminate the need for travel to outside communities and serve as a focus for local pride. The facilities included in each center was determined according to surveys of area residents.[440]

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[436] Ibid., 91.

[437] Ibid., 91-92.

[438] Ibid., 91.

[439] Ibid., 93-4.

[440] Ibid., 94-5.

As Howard had imagined for his Garden City, the greenbelt towns were progressive socially as well as in terms of physical planning. The Resettlement Administration encouraged residents of the built greenbelt towns to engage in various cooperative enterprises, which included a nonprofit newspaper, a credit union, a cooperative health association, a cooperative nursery school, and cooperative food and drug stores. Some of these were successful, for a while, though most if not all dissolved over time.[441]

The three built greenbelt towns—Greenbelt, Greenhills, Ohio, and Greendale, Wisconsin—were eventually sold and integrated into the surrounding economic and urban fabrics, their greenbelts lost to private development. Despite their failure to persist according to the Resettlement Administration's vision, the greenbelt towns as first planned have had an afterlife as models for later Garden City designs, including SOM's plans for Oak Ridge.

Oak Ridge as Garden City

Even in their earliest (1943) plan for Oak Ridge, the members of the SOM design team looked to the Garden City for inspiration. They planned three separate neighborhoods north of the Oak Ridge Turnpike, each with about 1,000 houses, and each with its own elementary school and shopping center. Apartment buildings and dormitories would provide for small families and single workers, respectively, and a central shopping district and recreation halls would be built to serve needs not met by the neighborhood centers.[442]

As at earlier manifestations of the Garden City idea, including Letchworth, Welwyn, and the greenbelt town of Greendale, Wisconsin, at Oak Ridge SOM tempered the plan's radical

[441] Ibid., 171-185.

[442] Skidmore, Owings & Merrill, *Preliminary Master Plan*, 9; Kesaris, ed., *Clinton Engineer Works*, 4.2.

social implications with references to conventional suburban architecture and planning. Manhattan Engineer District head Colonel James C. Marshall had encouraged a conservative approach to the town's residential areas by citing Norris, Tennessee, as an example of successful new-town building. At Norris, a Tennessee Valley Authority town, planners had successfully combined modern technology with architectural and planning references to the historic American built environment.[443] In their 1943 plan for Oak Ridge, in keeping with Marshall's wishes, SOM designers rejected the modernist grid in favor of what Owings called "safety devices"[444]: curving streets, culs-de-sac, and residential neighborhoods arranged around small-scale commercial centers. In addition, though the single-family houses at Oak Ridge would incorporate the materials innovations and new construction techniques for which the Pierce Foundation was known, they were also marked by traditional domestic cues including porches, fireplaces, and a separate bedroom wing.[445]

When SOM returned to Oak Ridge after the war, it proposed a housing replacement program coupled with a return to the planning principles espoused in the 1943 plan to remedy Oak Ridge's troubling architectural and urban-planning situation. The backbone of the Preliminary and final Master Plans was, again, the neighborhood or cluster model of community growth: Oak Ridge would expand not by densification, but by the addition of population-controlled neighborhoods with their own commercial and educational facilities. Though he was writing with reference to the re-planning of large cities, what Oak Ridge planner Tracy Augur wrote in a 1944 article entitled, "Objectives of Neighborhood Planning" is consistent with

[443] Hales, *Atomic Spaces*, 80-1.

[444] Owings quoted in Ibid., 85.

[445] Hales, *Atomic Spaces*, 85.

SOM's ideas about the social implications of cluster development as stated in the Preliminary Master Plan. "The basic idea of the neighborhood unit is that it is a unit of something else," Augur explained. "It is a device for organizing big cities into manageable parts in which the citizens may have a practical voice in determining the conditions in which they live. A neighborhood meeting is a good place to air opinions on . . . close-to-home subjects . . . . It can also serve the political purpose of the New England town meeting, for neighborhood opinion that has been well crystallized and organized can have a potent effect on municipal administration."[446]

Per the Garden City model, neighborhood planning as employed by SOM at Oak Ridge was in turn based on another design principle: the grouping of the city's basic functions—living, working, service, recreation, and traffic—into separate zones. These functions, wrote the authors of the Preliminary Master Plan should be in "relationship to each other, yet separated or buffered against the intrusion of one use on the other." At stake were two qualities the SOM team emphasized throughout the Preliminary and final Master Plans: efficiency and beauty, or "pleasantness." "The functions of producing and distributing goods and services must be separated from those which provide the amenities of living, if the city is to be made a more efficient place for the performance of its economic functions and also a more pleasant place in which to live," the Preliminary Master Plan explained.[447]

In mobilizing the separation of functions as a major organizing principle of the Oak Ridge plan, the SOM team did not just look to the Garden City, in which Howard had proposed a strict segregation of city administration, commerce, residence, industry, and agriculture. The

[446] Tracy B. Augur, "Objectives of Neighborhood Planning," *Architectural Forum* 80 (April 1944): 184.

[447] Skidmore, Owings & Merrill, *Preliminary Master Plan*, 9.

planners were more than likely also responding to a more recent trend in European Modernist city planning, as exemplified by the 1933 Athens Charter of the Congres International d'Architecture Modern (CIAM), published by Le Corbusier in 1943. The Athens Charter proposed the re-planning of overly-dense city centers according to a hierarchy of four functions: dwelling, leisure, work, and circulation.[448] SOM's list of five functions for the city of Oak Ridge was nearly identical, with the addition of "service," i.e. city infrastructure including the central steam plant.

Le Corbusier and the SOM planning team agreed that the most important of a city's multiple functions was its residential one. In the section of the Athens Charter on dwelling, Le Corbusier first railed against the unhealthy, overcrowded conditions of residential areas in city centers; the segregation of dwellings by class; and the lack of planning in suburban outgrowths. In the future, he wrote, "Residential areas should occupy the best places in the city from the point of view of typography, climate, sunlight, and availability of green space."[449] Similarly, the SOM team wrote in the Preliminary Master Plan: "In Oak Ridge, as elsewhere, the most important objective will be to improve the living areas of the city."[450]

The neighborhood planning principle, wrote the authors of the Preliminary Master Plan, would ensure that the various functions of the town in Oak Ridge would retain their proper relationship to one another. (Le Corbusier also advocated a type of neighborhood-unit planning: "The point of departure for all town planning should be the single dwelling, or cell, and its

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[448] The Getty Conservation Institute, "Charter of Athens (1933)," *Cultural Heritage Policy Documents*, http://www.getty.edu/conservation/publications_resources/research_resources/charters/charter04.html (accessed November 21, 2012).

[449] Ibid.

[450] Skidmore, Owings & Merrill, *Preliminary Master Plan*, 10.

grouping into neighborhood units of suitable size," he wrote in the Athens Charter.)[451] The city would be nothing more or less than an aggregation of bounded and population-limited neighborhoods, each "self-contained in every respect with regard to the normal every day activities of the residents," plus a town center dedicated to those services that were best accommodated on the city level.[452] Re-planning Oak Ridge according to the neighborhood principle, the designers concluded, would be relatively easy, as the 1943 plan had begun that way, "and the remainder of the existing development lends itself well to such organization."[453]

According to the Preliminary Master Plan issued in March 1948, the future Oak Ridge would comprise thirteen neighborhoods (see figure 5.4), twelve for white and one for nonwhite residents. Eight neighborhoods were located north of the Oak Ridge Turnpike, four, including the neighborhood for African-American Oak Ridgers, south of the highway. Each neighborhood would center on an elementary school and a shopping area and would contain land dedicated to parks and playgrounds. The size of a neighborhood was limited by the maximum size of its elementary school, determined by SOM to be 500 students. Five hundred students translated to approximately 3500 people, to occupy—depending on the neighborhood—a mixture of single-family homes, apartments, and dormitories.[454]

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[451] The Getty Conservation Institute, "Charter of Athens (1933)," *Cultural Heritage Policy Documents*, http://www.getty.edu/conservation/publications_resources/research_resources/charters/charter04.html (accessed November 21, 2012).

[452] Skidmore, Owings & Merrill, *Preliminary Master Plan*, 10.

[453] Ibid.

[454] Ibid., 15, 17.

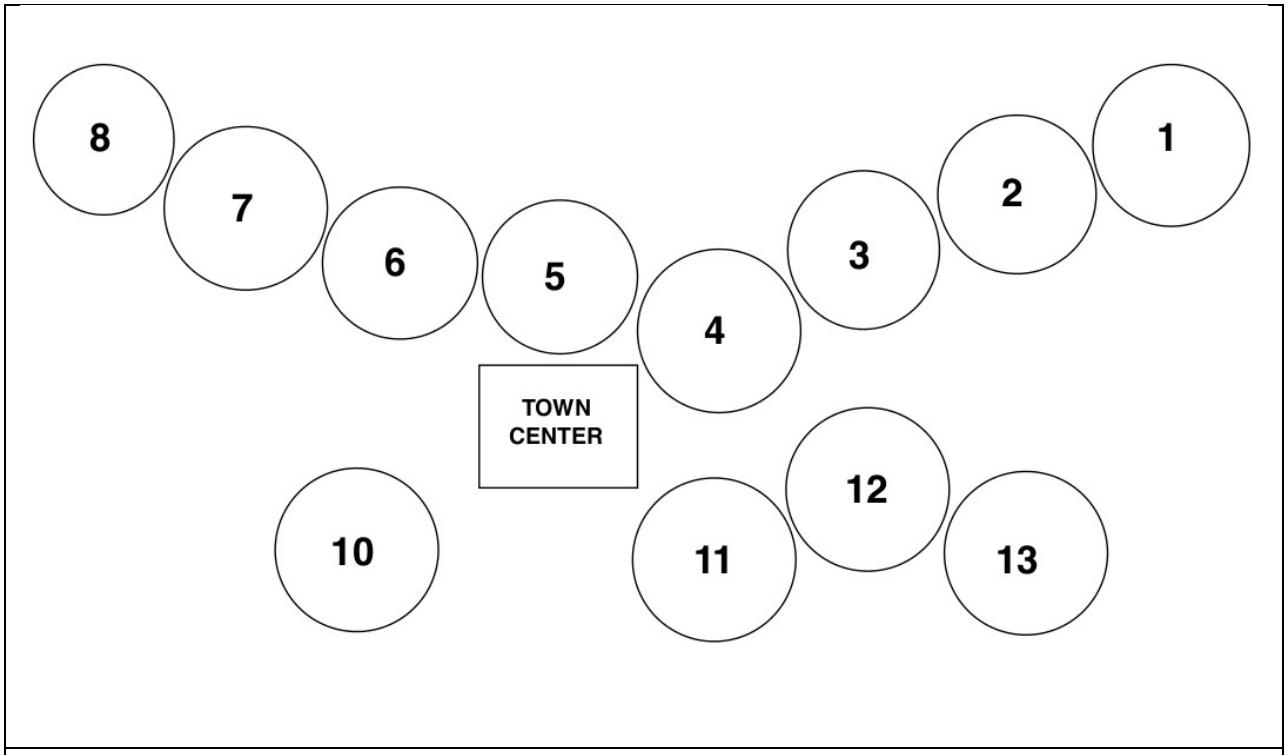

Figure 5.4: Diagram of Oak Ridge Neighborhoods. Created by Author.

Per the Preliminary Master Plan, neighborhoods 1 through 8 would stretch from east to west along the northern side of the Oak Ridge Turnpike. None of these was an entirely new development; in fact, SOM's housing replacement program called for a total *reduction* in the number of housing units north of the turnpike from 9,000 to 7,500. Nevertheless, a considerable amount of building would take place within each area. In neighborhood 1, the Preliminary Master Plan called for expanded playground facilities in the southeastern corner of the neighborhood, plus a new group of multi-family housing in the southwestern corner. Neighborhood 2 would also see enlarged playground facilities in its southeastern corner. A new shopping center would go up at the northwestern edge of neighborhood 3, while neighborhood 4 would get a new elementary school and playground at its center. A new shopping center would

be build in the southern area of neighborhood 5, and the playground facilities to the north would be enlarged. The plan also suggested a new elementary school and playground at the center of neighborhood 6. Neighborhoods 7 and 8 would see the most new construction north of the Oak Ridge Turnpike. A new multi-family housing area was to be built at the southern end of the neighborhood, and a new group of single-family homes would go up at the northwestern corner. The neighborhood's central playground facilities would also be expanded. In neighborhood 8, a new group of single-family homes would be built along its northwestern boundary; a new elementary school and playground would be installed to the south.

The four neighborhoods located south of the turnpike were entirely new. Neighborhood 9, directly across the freeway from neighborhood six, would stretch along the proposed city administrative center. Neighborhood 10, the area designated for nonwhite residents, was located to the southwest of neighborhood 9. Neighborhood 11 lay to the east, on the opposite side of the central shopping district from neighborhood 9. Neighborhoods 12 and 13 were east of neighborhood 11, along the south side of Oak Ridge turnpike.

Though each neighborhood was to have some mix of housing types, the particular ratio varied. The SOM planners sketched out some of the variations in the Preliminary Master Plan, leaving the details to their final report. Single-family homes and duplexes would be most numerous housing type in every neighborhood except neighborhood 9. Neighborhoods 9 and 11, which lay next to the town's cultural, administrative, and commercial center, would have the most apartments. Dormitories or efficiency apartments would accommodate single workers in the existing dormitory area, along Oak Ridge Turnpike between neighborhoods 2 and 3. Additional dorms or efficiency apartments would be built to the east of neighborhood 9. Again, each of these areas was relatively close to the town's shopping centers. In addition, the flatter

land nearer the Turnpike (and thus the city center) would more easily accommodate these larger structures. Neighborhood 10, for the African-American workers and their families, would contain every type of housing.[455]

In total, the Preliminary Master Plan estimated that 60% of Oak Ridge's future family housing would consist of single-family houses. Fifteen percent would be two-family houses, and 25 % would be in buildings with more than two apartments. This would require construction crews to build approximately 5,000 additional single-family homes, 1,751 duplexes, and 2,025 apartment buildings.[456]

The Preliminary Master Plan also contemplated the construction of new non-residential facilities. The SOM team, keeping to the principal of functional separation, privileged shopping centers or strip malls over isolated commercial facilities. These commercial groups would include eleven neighborhood centers, of which only six existed prior to the preparation of the Preliminary Master Plan. There were, in addition, two existing secondary town centers, at Jackson Square (the main shopping center for the original town of 3,000 houses) and Jefferson Center. Jackson Square was located between neighborhoods 2 and 3, north of the existing dormitories area. Jefferson Center lay just off Oak Ridge Turnpike between neighborhood 6 and 7. Finally, the designers proposed the building of a new main town center across Oak Ridge Turnpike from neighborhood 5. The downtown shopping center was to contain approximately 26.75 acres of stores on 108.48 acres of land.[457]

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[455] Ibid., 18.

[456] Ibid.

[457] Ibid., 23

In addition to tabulating the total commercial space required by the city, the SOM team also made an effort to predict how much of each kind of retail space would be needed. In making these estimates, the designers used the same formulae applied by Clarence Stein and Catherine Bauer in their planning of Radburn.[458] Thus Oak Ridge did not just mimic the Garden City model in its spatial arrangements, but reflected the use of the same technical planning methods as had earlier proponents of Howard's ideas.

Though in 1948 the AEC's administrative facilities were scattered throughout Oak Ridge, in the Preliminary Master Plan the SOM team proposed consolidating them into a single center adjacent to the main shopping center just south of Oak Ridge Turnpike. The administrative buildings of the incorporated city, too, should be located next to the AEC facilities. The land designated for the two administrative clusters was plenty large enough to allow for expansion, an important factor given the uncertainty surround both incorporation and the future of the atomic energy project.

The administrative facilities were the only structures whose architectural treatment the SOM team discussed at any length in the Preliminary Master Plan. The AEC and city-government buildings were to be "architecturally related in a design similar to the civic centers of many cities." This would likely mean a Beaux-Arts treatment, as in Burnham's 1909 Chicago plan, and as utilized to various extents on the permanent Army bases built during the 1920s and 1930s. But while the two administrative groups would be thus related, the designers proposed "that precedence should be given to the A. E. C. Administration Building in the consideration of

[458] Ibid., 20.

location and setting selected because of the special import that this building connotes to Oak Ridge . . . . The building should stand as a symbol of the reason and existence of the town."[459]

Oak Ridge's planners had accordingly already picked out a site for the AEC building, more or less in the center of the shared administration area. The building would be erected on a rise, thus making it easily visible to people visiting the town and giving its occupants spectacular views. A large lot surrounding the building was to be preserved, both to safeguard those views and to allow enough room for roadways and parking.

The one land-use type the SOM team had added to Le Corbusier's list of four (dwelling, leisure, work, circulation) was "service," by which the designers meant both the city's utilities infrastructure and its light-industrial facilities. (All of the heavy industry associated with Oak Ridge was located outside of the city limits and thus not addressed in the Preliminary Master Plan.)[460] In 1948 most of Oak Ridge's light industries were scattered around the town, occupying buildings not purpose-built for those uses. The town's bus terminal and associated buildings, with a physical life ranging between 5 and 15 years, were located near Jackson Square and Jefferson Center. The city maintenance operations were, like the light industry facilities, scattered throughout the city in temporary buildings. The major utilities, including the steam plant, the water treatment plant, and the power plants, occupied more permanent facilities.[461]

As it had with the town's administrative structures, SOM proposed consolidating the light-industrial and service buildings. In the Preliminary Master Plan, these uses were assigned to two areas: the existing warehouse area just south of Oak Ridge Turnpike across from

[459] Ibid., 25.

[460] Ibid., 27.

[461] Ibid.

neighborhood 1. This particular region of the city had enough space to allow for an expansion of industrial facilities, and was well-located with respect to roads and rail lines. The designers proposed screen planting to protect neighborhood 13, to the west, from the sounds and smells of the area. The second industrial-service center, which would house the majority of the city maintenance structures, was to be located to the south, inside the U created by the boundaries of neighborhoods 11, 12, and 13. Existing forest would segregate the industrial from the residential areas. Several industrial facilities would remain scattered throughout the city for the physical life of their buildings, as the amount of investment already made into their physical plants precluded an immediate move.[462]

Oak Ridge's schools were its most important non-residential facilities, at least as far as physical organization went. Each neighborhood was designed around an elementary school, to be located so that it was no more than 1/2 mile from any house whose children it served, and away from any major street crossing. The schools would be built on enough land to provide parkland and playgrounds not just for attendees, but for the neighborhood as a whole. Its aesthetics were important, too: "Well-designed school buildings in an attractively landscaped area will go far toward setting the pattern of an attractive neighborhood," the authors of the Preliminary Master Plan wrote.[463]

Oak Ridge's two Junior High Schools were to serve a function parallel to that of the secondary shopping centers: as gathering places, below the level of the entire town, for adult social and political activities. One Junior High School, serving students living in neighborhoods 1, 2, 3, 12, 13, was to be located in the existing Senior High School building, adjacent to the

[462] Ibid., 28.

[463] Ibid., 29.

Jackson Square shopping center. The other Junior High School, for neighborhoods 4-9 and 11, would be at the western edge of the new cultural center north of the city's administrative center, between neighborhoods 5 and 6. Again, the Junior High Schools would host town-wide recreational activities, though the old Senior High School was on a smaller-than-optimal lot.[464]

The Senior High School was to be built at the opposite end of the new cultural center from the second Junior High School, adjacent to neighborhood 4. Its ample lot would accommodate the town's central athletics facilities as well as those required by the students.[465]

The remainder of the Preliminary Master Plan was given over to a discussion of the town's circulation pattern, and to special uses including churches and transportation facilities. As for the former, SOM noted that the existing street pattern north of the Oak Ridge Turnpike, constructed according to the firm's 1943, would largely remain unchanged. The street pattern south of the highway, on the other hand, would need re-planning. The most important consideration in arranging the primary and secondary roads was to avoid bisecting any of the thirteen neighborhoods; instead, the intra-neighborhood streets would serve local traffic only, and consist largely of dead-end lands and culs-de-sac.[466] With respect to churches, club buildings, and other land uses not addressed above, the Preliminary Master Plan designers left most of the site selection for the final plan. The planning team also discussed the location of the various transportation terminals and what railroad lines would need extension or redirection.[467]

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[464] Ibid., 33.

[465] Ibid.

[466] Ibid., 38.

[467] Ibid., 40-3.

In the nine months between SOM's Preliminary Master Plan and the final Master Plan, dated December 1948, the design principles underlying the scheme changed little. As had the Preliminary Master Plan, the final Master Plan made it clear that SOM's plan for Oak Ridge was based on two interrelated design principles. First, the town as a whole was composed of multiple, largely self-sufficient, neighborhoods, gathered around a single commercial, civic, and cultural center. "Neighborhood" and "community" were, for the authors of the Master Plan, nearly synonymous. The original three neighborhoods planned in 1943 were "well-planned, attractive, and already have taken on the character of a mature and desirable residential community," they wrote. "The job of rebuilding the housing starts with a nucleus of these three neighborhood units complete with schools and other community facilities."[468]

Second, the SOM design team argued that the best city plans separated the community's different functions and protected each from incursions by the others. In their Master Plan, the designers offered an extended analogy between a city and a single-family home. "A house for so large a family must be arranged carefully if life within it is to be pleasant, housekeeping easy, and the budget kept within reasonable bounds," the authors of the Master Plan wrote. "There must be living rooms and sleeping rooms, work rooms and service rooms, business offices, connecting corridors, systems . . . . The rooms must be of the right number and size for their respective purposes; they must be conveniently arranged in relation to one another; corridors must be adequate; and utility lines must have the right capacity and be in the right locations." In the Master Plan, the SOM team explained, the thirteen neighborhoods were the equivalents of the

[468] *Master Plan*, 9.

house's living and bedrooms; the central shopping area and service centers were the work rooms; the central administrative district was the office; the streets were the corridors; and so on.[469]

Like in the Preliminary Master Plan—and as in CIAM's concept of The Functional City—, in the final Master Plan the SOM planners insisted that the primary function of the town of Oak Ridge was its residential one. Thus the plan began and ended with the thirteen "living rooms" or neighborhoods, and only after locating and laying out these sought to arrange the city's "work rooms," "offices," and "corridors" to best relate to one another, and to protect the particular character of the neighborhoods against their transformation into multi-purpose spaces.[470]

The layout presented in the final Master Plan, with eight neighborhoods to the north of the Oak Ridge Turnpike, four neighborhoods to the south, and the central commercial, cultural, and administrative groups at the town's geographical center, was almost identical to that included in the Preliminary Master Plan. The only physical difference between the two was a slightly different street pattern in neighborhoods 10 or 11, explained by the fact that these would be entirely new developments, not dependent on existing roads and thus readily alterable.

What did change between the Preliminary and final Master Plans was the way the SOM team explained certain features of the town's design. One such feature was the need to build, from the ground up, so many additional facilities for commercial and community activities. While the scarcity of non-residential land uses in Oak Ridge went unremarked in the Preliminary Master Plan, in the Master Plan the SOM designers tied this condition to the town's unique history. While government ownership had brought the city some benefits, they explained, it had

[469] Ibid., 19.

[470] Ibid.

"discouraged the adequate development of many needed community facilities, such as adequate shopping, church, and recreation facilities. The government did not supply more than a minimum of such facilities, and their development by private enterprise so far, has been restricted to short-term concessions" due to the security restrictions under which all of Oak Ridge labored.[471]

But diversifying the town's commercial and cultural resources was not as simple as tearing down the fence surrounding Oak Ridge, the SOM team explained. Instead, the AEC—which would continue to have a major role in life at Oak Ridge, no matter the status of the disposal and incorporation programs—had to make a conscious decision to change the town's character. This meant relinquishing some of the housing currently reserved for workers in the atomic energy program to outsiders. Until the AEC located housing for some of its employees elsewhere, perhaps by developing residential communities between Oak Ridge and Knoxville, "Oak Ridge must remain primarily a service center for the atomic energy installations, and the admission of activities not related to such service must necessarily be limited."[472] Thus, no matter how much SOM's Master Plan resembled and idealized "normal" American small town, and no matter whether residents elected to buy their homes and incorporate as a self-governed city, the question of whether Oak Ridge remained a company town depended upon the actions of the AEC.

The SOM team also expanded its explanation of the 50,000 limit on Oak Ridge's future population in the Master Plan. In the Preliminary Master Plan, the designers had tied the number to physical limitations. The authors of the Master Plan reiterated these, citing "desirable

[471] Ibid., 12.

[472] Ibid., 16.

densities" and utilities demands. "An automobile manufacturer cannot design an economical car for five people that will serve ten people just as well," the planners wrote. "Likewise a city planner cannot design an economical city for 50,000 population that will serve that number just as well."[473] But in the final Master Plan, the SOM team added a second consideration: national security. Prefiguring the arguments Oak Ridge planning consultant Augur and others would make in the following years,[474] the Master Plan's authors suggested that in the future population increases should be accommodated by the building of additional, low-density cities in dispersed locations, rather than through the densification of existing urban developments. Thus even at Oak Ridge, cradle of the atomic bomb, safety from aerial attack was used as a justification for low-density, extra-urban development.

SOM's Master Plan for Oak Ridge, as an incarnation of Ebenezer Howard's Garden City scheme first published exactly fifty years earlier, was inherently anti-urban. The Oak Ridge design team, like Garden City planners before them, rejected the centralization and high density of the industrial city in favor of a multi-centered, low-density, and size-limited development. They organized the town according to neighborhoods centered on an elementary school, in an attempt to foster a sense of community among transplants from different cultures and geographical regions. They provided a full range of commercial and cultural services for Oak Ridge's inhabitants, hoping to minimize the need for trips to Knoxville and other urban centers.

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[473] Ibid., 15.

[474] See, for example: Tracy B. Augur, "Decentralization Can't Wait," *Tennessee Planner* 9 (December 1948): 35-44; Tracy B. Augur, "The Dispersal of Cities as a Defense Measure," *American Institute of Planners Journal* 14 (Summer 1948): 29-35; Tracy B. Augur, "Security Factors in the Planning of Urban Regions," *Planning & Civic Comment* 18 (September 1952): 9-14.

Controlled Development at Oak Ridge

The Master Plan was also anti-urban in its description of *how* the development of Oak Ridge according to the Garden City model might be achieved, regardless of the town's ownership and government status. Zoning, subdivision regulations, and building codes constituted only a partial solution to the problem of controlled development, the SOM design team argued. The authors of the Master Plan suggested that the AEC use its status as the sole owner of Oak Ridge's property to attach restrictions to the sale or lease of residential and commercial land. As voluntary agreements between seller and buyer, deed and lease restrictions could be far more specific than could zoning and other controls based on the police power.

In advocating the use of deed and lease restrictions, the SOM design team echoed the tactics of contemporary suburban builders, who used such controls in an attempt to stabilize property values and therefore increase interest in their developments. In the case of Oak Ridge, the purpose of deed and lease restrictions would be somewhat different: while they would be used to stabilize property values, they would also insure development according to the Master Plan with a greater degree of certainty than would other types of controls. The implications of restrictive covenants as used in the suburbs and at Oak Ridge were, however, the same. First, no matter their content, deed and lease restrictions implied a critique of typical urban development, wherein property owners converted their holdings to the most profitable use, no matter the effect on their surroundings. Second, the specifics of restrictive covenants including those envisioned for Oak Ridge placed a high value on qualities understood to be anathema to the industrial city, including homogeneity and low-density land uses.

Deed restrictions, otherwise known as protective or restrictive covenants, had been en vogue for only a few decades by the time SOM published its Master Plan for Oak Ridge.

According to urban historian Robert Fogelson, before the 1890s suburban developers had been hesitant to attach restrictions to the properties they sold, fearing prospective purchasers would walk away from a deal that dictated how they could or could not use land that they owned outright. But by the 1910s and 1920s restrictive covenants appeared highly attractive to both builders and buyers, in part because the suburban ideal had evolved to value permanence over the individual freedom of property owners.[475]

But restrictions offered more than just the promise that one's neighbors would be using their land the same way in fifty years as they were now. In Fogelson's analysis, restrictive covenants were manifestations of contemporary fears—the fear of others; the fear of one's own inner profit-seeker.[476] These fears were the same ones that had begun the suburban exodus nearly a century prior, as those who could left the city to escape noisy or smelly industries operating close by; neighbors of different classes or races; discordant or just plain ugly architecture; or the presence of property owners more interested in making a profit than in making a home. Restrictive covenants formalized the identity of the suburb as the anti-city.

According to the authors of the Master Plan, deed restrictions were the best legal instruments by which to guarantee that Oak Ridge remained a Garden City, instead of morphing into an urban mess. In the forward to the Master Plan, entitled, "Why a Master Plan for Oak Ridge," the SOM design team articulated the need for planning in terms that echoed contemporary critiques of America's industrial cities. There were many parties already or soon to be involved in Oak Ridge's development, the planners wrote, including the AEC, the future

[475] Robert M. Fogelson, *Bourgeois Nightmares: Suburbia, 1870-1930* (New Haven, CT: Yale University Press, 2005): 53-57, 68.

[476] Ibid., 123-143.

municipality, the town's residents, and businessmen and industrialists. "If everyone concerned with this process went his own way in his own time," they continued,

> the result would be a hodge-podge of buildings, streets and utilities either getting in each other's way or lacking where most needed. The result would not be a smooth-running, economical city and certainly not a pleasant one to live in. It would fail to serve the basic purpose for which Oak Ridge exists, to provide good living for people who are depended upon to do good work.[477]

To prevent such uncoordinated development, the authors of the Master Plan proposed a series of controls on future development. The first category of controls was based on the police powers. That is, these were limits on the actions on private property owners protected by the Constitution on the grounds that they guaranteed minimum standards of public safety.[478]

The first police-power control considered by the SOM team was zoning. The designers had prepared a zoning map for Oak Ridge as well as draft zoning regulations for use by a town planning commission. In these documents, each region of the town was assigned an intended land use, as well as limits on building location, height, bulk, and size. But while the SOM design team recommended zoning Oak Ridge, it noted that zoning as a device encompassed only a few aspects of the built environment. "It is not a complete device in itself, but is used in conjunction with other means of control," the Master Plan's authors wrote.[479]

The SOM team further recommended establishing subdivision regulations for the city of Oak Ridge. A draft document of this type was also included with the master plan. Because in Tennessee a town had first to submit a major road plan in order to adopt subdivision regulation, the SOM team also published such a map with their report. Subdivision regulations, according

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[477] Skidmore, Owings & Merrill, *Master Plan*, 1.

[478] Ibid., 28.

[479] Ibid.

to Oak Ridge's designers, "establish minimum standards of design and construction for all new land development, including both private and public improvements." As such, subdivision regulations aided both a city's planning commission, which had an objective bar by which to judge new building projects, and potential developers, who would know up front what was expected of them. Subdivision regulations, by eliminating unsafe or poorly-designed structures from consideration by Oak Ridge's planning commission, would insure good living conditions for residents and stabilize property values, the SOM team argued.[480]

The third and final category of police-power controls examined by the authors of the Master Plan was municipal codes, including building, plumbing, and electrical codes. Like subdivision regulations, these codes set minimum standards to protect against unsafe building practices. The same standards would apply to every building in the entire city. In addition, the codes would require building permits and inspections.[481]

Together, zoning, subdivision regulations, and municipal codes "will enforce the minimum standards of the Master Plan," the SOM team wrote. "They state the minimum requirements for what is to be [built], where it is to be built, and how it is to be built."[482] But police-power controls were by definition limited; involuntary restrictions on the actions of private individuals had to be justifiable in terms of public welfare in order to be legally permissible. "Although these controls are the most effective that are available to the average city today," the authors of the Master Plan noted, "it should be recognized that they are predicated on

[480] Ibid., 29.

[481] Ibid.

[482] Ibid.

the minimums required for the health, welfare, and safety of the community and are restrictive and therefore negative rather than positive in character.[483]

But Oak Ridge was not an "average city." It more closely resembled a modern suburban development in that all of the town's property was in the hands of a single owner (the federal government), the same entity responsible for directing the early stages of the community's physical development. Thus, the AEC could follow the lead of private suburban builders and attach deed or lease restrictions to each piece of property transferred, "so that maximum rather than minimum standards may be required."[484]

Unlike zoning and other police-power controls, deed and lease restrictions were voluntary agreements between seller or landlord (in this case the AEC) and purchaser or lessee. Thus the details of the restrictions did not need to be rationalized in terms of public safety, and in fact were often quite specific. The SOM team gave as an example the requirement that a city architectural board of review approve any new structures built on a particular property.[485]

Though deed and lease restrictions were typically used only for residential property, the authors of the Master Plan pointed out, in Oak Ridge they might be attached to every parcel of land, including those for commercial, industrial, or city use. "Restrictions could be utilized for the general welfare of the entire population," the SOM team argued. "They could be administered by a representative citizen body operating on democratic principles."[486]

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[483] Ibid., 26.

[484] Ibid.

[485] Ibid., 27.

[486] Ibid.

One potential drawback to deed or lease restrictions was their rigidity. The more specific the restrictions attached to a particular parcel of land, the more difficult it would be to adapt that property to the town's changing needs. Thus the authors of the Master Plan urged careful consideration of each property's potential future use in order to determine how flexible or not the restrictions on a particular parcel should be. But despite this issue, the report's authors remained enthusiastic about the application of restrictive covenants to Oak Ridge, noting that "[m]any of the most successful large suburban developments in the country have been built and administered under this method, using deed and lease restrictions adopted specifically to regulate the use of each parcel of land."[487]

In addition to deed and lease restrictions, land dedication was available to the AEC as a means of insuring the execution of the Master Plan. Land dedication was essentially a restrictive covenant attached to municipal property: the AEC would turn over land marked in the Master Plan for roads, schools, parks, etc. on the condition that the city of Oak Ridge use it only as such. Like deed restrictions, land dedication was voluntary, though the SOM team thought "it is inconceivable that the city would reject such an offer." After all, the land would come at no monetary cost. The AEC, too, would benefit, as it "would be making an invaluable contribution toward the development of Oak Ridge in accordance with the Master Plan."[488]

As did restrictive covenants contemporary suburban communities, the deed and lease restrictions proposed by the SOM team carried within them a rejection of the industrial city. The built environment of the industrial city was the product of decisions made by numerous independent property owners over time, usually on the basis of personal profit rather than

[487] Ibid.

[488] Ibid.

community welfare. Reformers, including city planners, had been struggling for over a century to make sense of urban growth, but so far had managed to intervene only in cases where basic public safety was at stake. Part of the mid-century suburban ideal, on the other hand, equated the newness of the extra-urban built environment with the ability to control present and future growth, to guard against indiscriminate action by individual property holders in the name of protecting the property values of all. The argument in favor of restrictive covenants was thus highly contradictory, in that it justified the arrest of short-term profit-seeking on the grounds that property values would be guaranteed in the long run. But whatever its logical flaws, it was convincing to many mid-century Americans, including the planners at SOM.

Though the SOM designers did not specify exactly what the AEC's deed or lease restrictions might contain, they did indicate that these would serve to insure development according to the Master Plan. That is, deed and lease restrictions would protect the vision of Oak Ridge as a Garden rather than an Industrial City. For example, deed and lease restrictions, in combination with zoning, could be used to protect the neighborhood basis of Oak Ridge against the centripetal pull of the city center. Controls might put limits on the size of the central commercial areas while simultaneously preserving the central section of each neighborhood for commercial and institutional use. Similarly, the overall size and shape of the city would be limited not just by the topographical barriers surrounding Oak Ridge, but also by the land dedication or restriction of certain properties for recreational or agricultural use.

Zoning and deed and lease restrictions could also be used to prevent the densification of residential areas. Controls might specify not just setbacks and building heights but also housing types—single-family homes only in one location, no more than two families per house in another.

Finally, deed and lease restrictions might be used at Oak Ridge to prevent heterogeneity of all kinds—of land uses; of people of different classes; of residents of different races. Suburban developers, for instance, had been known to specify minimum house prices so that only people of certain income levels could live in a particular neighborhood or subdivision.[489] At Oak Ridge, the desirability and rental rates of particular house types—the Cemesto single-family homes cost more than the prefab houses, for example—had already sorted the town's scientists from the unskilled atomic workers. Deed and lease restrictions could be used to replicate or modify existing socioeconomic settlement patterns, whatever the status of the housing replacement program. Similarly, one can imagine the AEC attaching race restrictions to the properties in the neighborhoods intended for white workers (all except neighborhood 10). (While the recent Supreme Court decision in Shelley v. Kraemer (May 3, 1948) had determined the *enforcement* by the state of restrictions based on race to be unconstitutional, it did not preclude *voluntary* adherence to the same.)[490]

Thus the Master Plan for Oak Ridge manifested contemporary anti-urban sentiment not just in its design content, but also in the means by which the SOM team recommended the scheme be carried out. The Master Plan's embrace of deed and lease restrictions implied a desire for exactly those qualities observers found to be lacking in the modern industrial city—particularly permanence and homogeneity.

The situation of Oak Ridge in 1948 was in many ways unique. As the AEC contemplated turning control of the town and its property over to residents, it faced the unusual challenge of converting a secure, hastily-constructed, one-industry town into a community that Americans of

[489] Fogelson, *Bourgeois Nightmares*, 133-37.

[490] Cornell University Law School, "Shelley v. Kraemer," Legal Information Institute, http://www.law.cornell.edu/supct/html/historics/USSC_CR_0334_0001_ZS.html (accessed November 21, 2012).

various professional backgrounds would choose to live in. At the same time, the goal of the SOM design team—to build a Garden City that combined the best of American urban and rural life without the faults of either—represented an apparent solution to a variety of physical and social ills. Twenty years later, the federal government would again return to the promise of the Garden City, this time with financial support for private developers of suburban New Towns.

Columbia, Maryland: A 1960s Garden City

The New Towns program of the late 1960s and early 1970s reiterated the themes of earlier Garden-City projects, including Radburn, New Jersey; the greenbelt towns of the New Deal; and the postwar redevelopment of Oak Ridge. The New Towns, their promoters claimed, presented an alternative to both congested center-city living and residence on the unplanned suburban fringe. Federal support of New-Town development followed a last-ditch effort to save the industrial city through "urban renewal," or slum clearance followed by massive redevelopment, often to the ultimate benefit of the city's suburban neighbors.[491]

Home sales at Columbia, Maryland began in 1967, one year before passage of the New Communities Act of 1968, which urged private builders to consider building large-scale mixed-use communities, and three years before the Housing and Urban Development Act of 1970, which offered financial assistance to New-Town builders. The project is nevertheless considered the archetypal American New Town, per a 1976 National Science Foundation report.[492]

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[491] In large part because so many federally-sponsored urban redevelopment schemes, especially after 1949, encompassed highway construction. Jon C. Teaford, *The Rough Road to Renaissance: Urban Revitalization in America, 1940-1985* (Baltimore, MD: Johns Hopkins University Press, 1990), 12.

[492] Forsyth, 388.

Columbia epitomized the Garden City-based plan that would characterize later Title VII projects, including Woodlands, Texas.

Columbia was developed by James Rouse, an outspoken proponent of urban renewal and former Eisenhower appointee to the President's Advisory Committee on Government Housing Policies and Programs.[493] Rouse understood his New Town, which followed a foray into suburban shopping-mall development, not as a renunciation of his earlier concern for the center city, but rather as an extension of his commitment to urban revitalization.[494]

Columbia's planners looked to Howard's Garden City and its built manifestations as precedents. The chief architect-planner for the New Town recalled in 1990: "Our gurus in planning Columbia were Ebenezer Howard, Clarence Stein, and Frederick Law Olmsted . . . . Clarence Stein's *New Towns For America* was our bible." Specific models for the development included the usual suspects: Letchworth, Welwyn, Radburn, New Jersey, and the New Deal greenbelt towns, in addition to Roland Park (in Baltimore) and Tapiola, Finland.[495] The diagrams prepared by Columbia's planners may as well have been drawn by Howard, showing as they do nine "villages" (analogues of Howard's wards) orbiting a Town Center; at the heart of each "village" was a commercial center (see figure 5.5). In a variation on Howard's theme, each village was further subdivided into "neighborhoods," each centered on an elementary school. (Columbia had an additional organizational layer in part because it was intended to be three times as large as Howard's Garden City, with a projected population of 110,000).[496] As SOM

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[493] 156.

[494] Forsyth, 391.

[495] Tennenbaum, 16.

[496] Forsyth 391, 396.

had proposed for Oak Ridge, the town's growth and aesthetic development are controlled by stringent architectural and land-use covenants.[497]

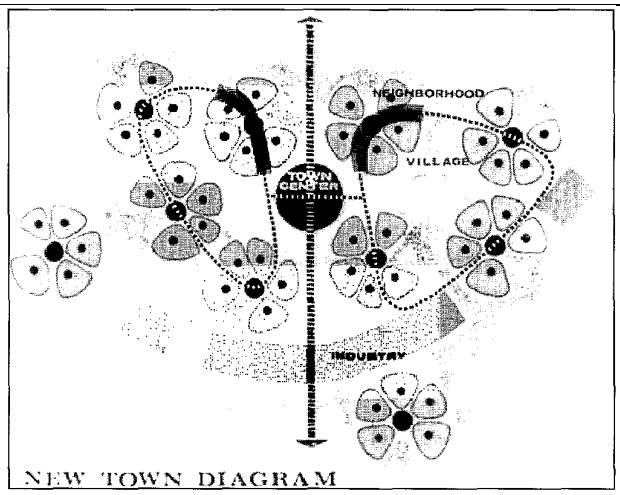

Figure 5.5: Diagram of Columbia, Maryland Neighborhoods. Published in Howard Gillette, Jr., "Assessing James Rouse's Role in American City Planning," *APA Journal* (Spring 1999): 159.

Columbia has been applauded for its ethnic and social diversity. Its residents have largely agreed that it is a pleasant place to live. Its population density is higher than conventional suburban developments, and its example likely shaped its home county's flexible support of large-scale development projects. Columbia did not, however, save the city—or at least not nearby Baltimore. Baltimore would have to wait another decade for its downtown renaissance. In 1978 Rouse returned to the inner city, this time to build a "Festival Marketplace"—a shopping mall—as the centerpiece of the Inner Harbor redevelopment scheme.[498]

Conclusion

[497] Forsyth, 405-6.

[498] Gillette, 158???; Forsyth ???, Avin, 28.

Oak Ridge, which predated Columbia by more than two decades, was the Army Corps of Engineers's New Town. The planning and re-planning of Oak Ridge according to the Garden City model brought Army-post design full circle. The cantonments of World War I were conceived by their civilian planners as soldier-cities. The War Department Housing Program of the 1920s and 1930s transformed the residential portions of Army posts into picturesque suburbs. At Oak Ridge, SOM and the Army Corps of Engineers rejected both earlier models, opting instead for a third way, a decentralized yet self-sufficient Garden City.

SOM's 1948 Master Plan for Oak Ridge encapsulates the anti-urban attitude shared by many Americans in the years following World War II. The design team's use of the Garden City model was not just aesthetic; it was also ideological. Since 1898, when Ebenezer Howard published his first book on the subject, the Garden City had stood for the eradication of the industrial city in favor of something resembling small-town life. Though the Garden City also differed physically and socially from sprawling, decentered, often unplanned suburban developments, it shared with the latter a common sense that the industrial city posed a profound threat to traditional American cultural values.

The Master Plan for Oak Ridge was also anti-urban in its embrace of deed and lease restrictions. SOM's design team, like early suburban developers, favored restrictive covenants for the increased specificity and scope they offered over police-power controls like zoning. Deed and lease restrictions could be used to eliminate urban problems including the free mixing of land uses, classes, and races *before* they even began.

Oak Ridge was not the last of America's experiments with Garden City planning. Rather, the New Towns of the 1960s and 1970s turned contemporary dissatisfaction with both cities and suburbs into a market for community development. The federal government's support of New

Town development echoed its advocacy of the Garden City model in the greenbelt towns of the New Deal as well as at Oak Ridge.

Oak Ridge is known as the hometown of the atomic bomb, the site of the most consequential government-sponsored scientific-research program in American history. But it is also holds significance, as this chapter has shown, as an early site of the postwar breaking-apart of the historical relationships between city and country, suburb and city.

Epilogue: Base Realignment and Closure, 1988-2005

Oak Ridge's legacy extended beyond SOM's Master Plan for the community. It also foreshadowed the large-scale civilianization of military bases following the Cold War, under the federal government's Base Realignment and Closure program, or BRAC. BRAC opened a new chapter in the history of the relationship between military and civilian spaces in the United States: Where for the seven decades between the start of World War I and the first round of base closures in 1988 military officials had formed their installations in the image of civilian cities and suburbs, now local communities would be confronted with the question of how to un-make the military posts in their midst. Before BRAC, the transmission of ideas about architecture and planning between civilian communities and Army posts had largely been accomplished through the involvement of civilian design experts in the building of military installations. After BRAC, affected communities had to grapple with the Army post itself, deciding whether and how to reuse or replace the airfields, ammunition depots, administrative buildings, barracks, and officers' housing left behind by the military.

Much of the literature on the redevelopment of bases closed under BRAC is celebratory. In part this is because the BRAC program prioritized military concerns over the economic and environmental impacts of post closures: BRAC commissioners defined the success of a round of closures in terms of its potential to effect efficiencies and savings within the Department of

Defense (DoD), rather than in terms of the bases' redevelopment by community groups.[499] But in addition, according to DoD and observers including a research team from MIT, the shuttering of military posts under BRAC had a much less negative impact on civilian economies than initial assessments had predicted.[500]

For one thing, appraisers of the BRAC program have noted, base closure resulted in less-than-anticipated net job loss to local communities, and in some cases actually raised employment numbers. A document published by DoD's Office of Economic Adjustment, an agency charged with supporting communities affected by post closures, indicates that as of 2004, "taken together, more than half of the civilian jobs lost [under BRAC] have been replaced." It went on to list thirteen locales that had experienced net employment growth after BRAC, the most dramatic of which was Pease Air Force Base, in New Hampshire. After losing 400 civilian jobs in the 1991 BRAC, the community saw the creation of 5,124 new positions, for a change of 1,181%.[501]

Some observers have argued, moreover, that the redevelopment prompted by BRAC has benefited the built environment of some affected communities, as the remaking of a former military base offers an opportunity for urban renewal or revitalization on a scale unavailable under normal circumstances. Redevelopment inevitably improves the sites of rundown, abandoned military structures, the authors of a 2004 *Economic Development Journal* article on

[499] The 1988, 1991, 1993, 1995, and 2005 rounds of BRAC all privileged military criteria above community impacts or even economy. See Defense Secretary's Commission on Base Realignment and Closure, *Base Realignments and Closures: Report of the Defense Secretary's Commission* (Washington, DC, 1988), 6-7; Defense Base Closure and Realignment Commission, *1991 Report to the President* (Washington, DC, 1991), 1-2; Defense Base Closure and Realignment Commission, *1993 Report to the President* (Washington, DC, 1993), 3-11, 3-12; Defense Base Closure and Realignment Commission, *1995 Report to the President* (Washington, DC, 1995), x, 5-1; All of the above documents are available online, http://www.defense.gov/brac/army.htm (accessed November 24, 2012).

[500] Ryan J. Watson and Terry F. Buss, "Back to BRAC," *Economic Development Journal* (Summer 2004), 17-8.

[501] *Renaissance: New Jobs, Uses of Space, & Resources; A New Life for Former Military Bases* (Arlington, VA: Office of Economic Adjustment, 2005), n.p. [4], http://www.oea.gov/index.php/resource-library/resource-library/cat_view/326-assistance-programs/328-base-realignment-a-closure-brac/337-past-brac-experiences (accessed November 24, 2012). The document, published in 2005, preceded the latest round of BRAC closures.

BRAC suggest. They illustrated their study of the community impacts of base closure with photographs of military buildings in disrepair, adding suggestive captions including, "Old barracks fallen into ruin. Note vandalism."[502] Beyond simply replacing old structures with new ones, the unique characteristics of military reservations presented civilian communities affected by BRAC with opportunities to undertake major building projects. In particular, MIT researchers Bernard J. Frieden and Christie I. Baxter point out in their report on post reuse, military properties are typically well-located and large in land area, two features that make redevelopment attractive.[503]

The Lowry neighborhood of Denver is often cited as an example of urban revitalization via post-BRAC redevelopment. The 1,866-acre site was formerly the home of Lowry Air Force Base, which closed in 1994. As of 2008, the neighborhood boasted over 8,300 residents living in apartments and houses valued up to $2 million. Over 125 companies employing 7,000 people had also moved to Lowry. The community, with 800 acres of open space and 20,000 newly-planted trees, was known for its greenery.[504] Embracing the principles of "new urbanism," Lowry's planners established land-use controls to encourage the deployment of architectural details, including brickwork and front porches, common to older Denver neighborhoods. They eschewed newer commercial models including strip or indoor malls in favor of a Main Street-style town center, with benches for pedestrians and sidewalk space for outdoor dining.[505]

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[502] Watson and Buss, "Back to BRAC," 19, 21.

[503] Bernard J. Frieden and Christie I. Baxter, *From Barracks to Business: The MIT Report on Base Redevelopment* (Economic Development Administration, 2000), v, 74.

[504] Peter Bronski, "Lowry Lowdown," *Planning* (November 2008), 8.

[505] Frieden and Baxter, *From Barracks to Business*, 50-51; See also *Renaissance*, n.p. [10].

Of course, base redevelopment—including at Lowry and other vaunted examples—is not without its problems. One of the most significant among these has to do with environmental contamination; as of 2008, over 10% of the nation's Superfund sites were DoD properties. "When [former military bases] are turned over to the civilian community and redeveloped into neighborhoods, parks, and shops," write the authors of an article on environmental cleanup at Lowry, "they become everybody's problem."[506] Other complications in base reuse include unexploded ordinance, underdeveloped roads systems and utilities, and existing buildings that fail to meet local codes.[507]

But while the literature on base redevelopment is explicit about the possibilities and problems associated with the BRAC program, it also reveals a less-examined theme in the recent history of American military space: the extent to which the past use of a particular site by the armed forces tends to shape its future development, even after its conversion to private ownership. The MIT study of post-BRAC communities in particular highlights the tendency of Local Redevelopment Agencies (LRAs) to privilege the *reuse* of existing military facilities for civilian ends over the wholesale *redevelopment* of a former base to meet community needs, both in the short and long terms. As a consequence, communities are likely to remain embedded within the Military-Industrial Complex long after a military post itself has closed.

Frieden and Baxter, the authors of the MIT report on base redevelopment, point out that "prior use has not necessarily dictated reuse" at the former military posts they studied, citing cases such as Orlando, Florida, Stratford, Connecticut, and Long Beach, California in which

[506] Bronski, "Lowry Lowdown," 9-10.

[507] Frieden and Baxter, *From Barracks to Business*, v.

LRAs opted to demolish military facilities to start redevelopment from scratch.[508] Yet these examples seem to be the exceptions to the rule. Many Air Force and Navy reservations, for instance, were taken over by LRAs largely as-is, and used as aviation and shipping centers, respectively.[509]

Because reuse costs less up front than does redevelopment, many LRAs sought lessees who could make immediate use of existing facilities, at least in the short run. The extent to which reuse activities mirrored prior military uses depended upon the extent to which the facilities themselves were specialized. "If the assets are generic rather than specialized—such as classroom buildings rather than engine repair facilities—they may lend themselves to a wide variety of reuse possibilities," Frieden and Baxter write. "If they are more specialized, they may prompt LRA staff to consider bringing in businesses that can use them."[510] Planners at Kelly Field in Texas, for instance, kept existing aircraft maintenance and modification shops open, with many of the same employees, and staked the economic future of the site on contract work for both the Air Force and civilian airlines.[511]

Some LRAs leased existing military facilities to raise money for future redevelopment. At Lowry, for example, the LRA's head had leased over 450 former Air Force housing units at an average of $700 per month by 1996. Having barely been touched since the BRAC turnover, "[t]he houses were not elegant," Frieden and Baxter write, "but they had large rooms and hardwood floors, and tenants were getting twice the amount of space for the same price they

[508] Ibid., 7.

[509] *Renaissance*, n.p. [5,6].

[510] Frieden and Baxter, *From Barracks to Business*, 70.

[511] Ibid., 70.

would pay in the city." Reuse worked for the tenants, and it worked for the LRA, which applied the rental income to major infrastructure improvements.[512]

Yet in some cases, the success of a supposedly "temporary" reuse program impeded redevelopment according to an LRA's long-term plan. Frieden and Baxter point to the example of Alameda Naval Air Station, located on an island across from Oakland in the San Francisco Bay. The city of Alameda appointed a nine-member temporary LRA to manage short-term reuse of the naval base beginning in 1993; the city itself would take over long-term redevelopment beginning in 1999.[513] Though the interim LRA initially target short-term lessees, it eventually offered longer-term leases to companies willing to perform their own renovations in exchange for below market rents. An Oakland manufacturer of industrial valves, for instance, opted to relocate to a hangar on the island under these terms, and spent $470,000 on a new sprinkler system, new heating and electrical systems, installing office space, and rendering the building handicap-accessible. Such investments posed an obvious conflict with the city's plan to sell the entire former naval station to one or more private developers in the early 2000s.[514]

Ironically, even those communities who opted for reuse over extensive redevelopment felt compelled to camouflage their properties' identities as former military reservations. At Fort Ord, for example, the state of California planned a new university campus, California State University, Monterey Bay. The first students arrived in 1995, and lived and studied in lightly-renovated one-story military buildings. Developers, according to the MIT researchers, "creat[ed] a cosmetic architectural treatment that made the utilitarian buildings look contemporary. In most

[512] Ibid., 48.

[513] Ibid., 80.

[514] Ibid., 82-3.

cases, this involved the use of color, murals, and canopies to lead the eye around the stark basic forms."[515] While the university's president expressed a desire to retain a sense of Fort Ord's history on campus, one planner argued that a successful reuse program would eliminate the "military persona" of the site. He asked: "What kind of picture should CSUMB graduates have on their diploma?"[516]

Planners at Lowry similarly decided that the neighborhood's history as an Air Force base wouldn't help it sell. To prepare for a Denver builders' association's 1998 Parade of Homes, which the Lowry LRA hosted, the site's developers removed military markers including sentry posts, fences, and Air Force signage. The LRA's exhibits on Lowry carefully avoided military language and references to BRAC. When they did acknowledge the Air Force connection, Frieden and Baxter write, "they went back to World War II and Jimmy Stewart, to recall the time when people felt warm and fuzzy about the military."[517]

The history of base redevelopment under BRAC thus reveals two things about the legacy of American military space. First, the economics of base redevelopment make reuse more attractive than replacement to many communities in charge of former military properties, at least in the short run. The uses to which military reservations were put therefore tend to carry over into their afterlives as civilian landholdings. This is especially true when more specialized facilities—for aviation, naval operations, or weapons production—are involved. Post-BRAC communities, in other words, sometimes choose to retain economic ties to the Military-Industrial

[515] Ibid., 80.

[516] Campus planner David Salazar quoted in Ibid., 80.

[517] Frieden and Baxter, *From Barracks to Business*, 50.

Complex because of the built environment they have been left with, rather than after a measured consideration of multiple development opportunities.

Second, civilian developers understand a former base's association with the military to detract from its value within private real estate markets. Thus even as they look to a base's past uses as a guide for future *economic* development, they might wish to distinguish the site *aesthetically* from reservations currently owned by the armed services. As the above examples show, the aesthetic re-imagination of a former post often goes only skin-deep; just because a site appears to have been transformed from "military" into "civilian" property does not mean that its relationship to the political economy of war-making has changed.

These two features of military space after BRAC—the tendency of military use to shape future, "civilian," use, and the desire on the part of developers to camouflage a former post's military history—are the logical by-products of the circumstances under which twentieth-century American military posts were first developed, circumstances explored in detail earlier in this dissertation. For decades, civilian and military spaces had mutually shaped one another, thanks largely to the engagement of civilian design practitioners in post-building projects. The involvement of civilian architects and city planners was in turn prompted, at least in part, by the peculiar political conditions of the American armed forces. The United States military increasingly modeled its bases on civilian communities to serve two purposes: to help justify the existence of a standing Army within a decentralized democracy; and to attract volunteers, and particularly officer candidates, away from private-sector employment. The architecture and planning of the twentieth-century military post, this dissertation argues, helped insure the survival of the Regular Army, as it domesticated the image of the American military, and served as an inducement to Army recruits.

Though the first implementation of BRAC in 1988 marked a reversal of decades of military expansion, it did not break the ties between military and civilian spaces in the United States. Rather, responsibility for camouflaging the nation's war machinery simply shifted from the armed forces to civilian communities. Like the military-post designers before them, LRAs and private developers grappled with how to make military bases look as *un*-military as possible, often while retaining economic ties to the armed forces. In the process, they used the peculiar circumstances of the military built environment—large landholdings in prime locations—to experiment with new civilian design ideals, including the "new urbanist" answer to widespread disillusionment with the American suburbs.

After the September 11, 2001 terrorist attacks on the United States, the situation of the United States military changed radically; so did BRAC. The first round of BRAC, in 1988, had been motivated largely by budgetary concerns.[518] The subsequent three rounds, in 1991, 1993, and 1995, upped the money-saving ante, as the dissolution of the Soviet Union drastically reduced the overseas responsibilities of American troops[519]. DoD officials used BRAC to reap a "peace dividend" offered by the quietened international scene.[520] The next and latest BRAC round, in 2005, reflected the United States's involvement in two major wars abroad, in that it marked a shift in the program's focus from economy to military modernization. "Secretary [of Defense Donald] Rumsfeld was very clear that his primary goal for the BRAC process was military transformation," wrote the 2005 commissioners in their report. " . . . While acknowledging the importance of savings as a BRAC goal, the Commission went beyond a

[518] Defense Base Closure and Realignment Commission, *1995 Report to the President*, 4-2.

[519] Ibid., 4-3.

[520] *2005 Defense Base Closure and Realignment Commission Report* (Washington, DC, 2005), 1:3, http://www.brac.gov/finalreport.html (accessed November 27, 2012).

business model analysis of DoD's recommendations and weighed the strategic environment within which recommendations would be implemented and their affect on the DoD's transformational goals."[521]

The 2005 round of BRAC was the largest and most complicated in the program's history. Commissioners considered a total of 190 DoD recommendations, more than the sum of all recommendations put forward in previous rounds.[522] As a result, the 2005 BRAC Commission report, which proposed changes at 800 installations, also included an unprecedented number and scale of base expansions.[523] At some of the 13 bases targeted for major expansions, according to a 2006 article in *Planning*, population growth over the six years between the Commission's findings and the 2011 deadline would surpass that seen in ten or twenty years under ordinary circumstances. Tim Ford, the executive director of the Association of Defense Communities explained, "In many instances, you're building and populating entire cities with these changes."[524]

Thus, after almost two decades of contraction under BRAC—before the latest round DoD facilities had been reduced by 20%—in 2005 the armed services turned their attention back to the building of military bases. The story of the creation of American military space is far from over. Though much has changed in the century since the Army constructed its Great War training camps, the position of the military vis a vis American society remains largely the same. It is likely, then, that military leaders will continue to look to civilian architects and city planners

[521] Ibid., 1:iii.

[522] Ibid.

[523] Gwen Moran, "Full Speed Ahead," *Planning* (October 2006): 20.

[524] Ford quoted in Ibid.

for assistance in building the bases of the twenty-first century. And it is also likely that the nation's "military" and "civilian" architectures, like their economies, will remain intertwined, even though their very interdependence renders that relationship, at times, invisible.

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